IDG

HACK OF THE MONTH
Vendors' sloppy messaging defaults open the door to system attacks. Page 50

NEW BUS STOP
QuickStudy: Get off the parallel and serial port bus technology and start riding USB. Page 82

EASING Y2K FEARS
Are you ready to handle a flood of your 2000 customer calls? Page 46

COMPUTERWORLD.

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NET PATENTS STIR DEBATE

Critics say established ways of doing business granted protection in cyberspace

BY JULIA KING

In the mad race to make big bucks online, thousands of companies are making a pit stop at the U.S. Patent and Trademark Office. What they want is monopoly protection for their proposed Internet innovations.

And they're frequently getting it — even for familiar ways of doing business that critics claim aren't really new or novel. The only thing different is that they occur in cyberspace.

"They're issuing crap at the speed of light," said San Francisco-based patent researcher and consultant Greg Aharon-

ian, referring to the Patent and Trademark Office's 1998 issuance of 125 patents for supposedly new ways of doing business on the Internet. This year, the Patent Office expects to issue as many as 200 more such patents.

"It's not that hard to get anything you do on paper to a computer. The fundamental question is whether that's a really innovative thing," Aharonian said.

A prime example is Priceline.com, which secured a patent for reverse auctions. That's where

HOME ACCOUNT CEO Chuck White defends its patents

Patents, page 81

JAVA FUELS HOME DEPOT EXPANSION

Retailer pilots catalog, order-entry applications

BY CRAIG STEDMAN

The Home Depot Inc. is starting to roll out Java-based applications to help run an emerging line of interior-design showrooms that's due for rapid expansion as a companion

business to the company's flagship retail stores.

The Atlanta-based home-improvement chain this month began piloting an electronic product catalog and order-entry system that it developed for the Expo Design Center showrooms. That follows the June launch of another application that employees in the new stores will use to track the progress of home-improvement projects they're coordinating for customers.

Home Depot, page 81

GETTING TOUGH ON EASE OF USE

Very quietly, a group of corporate IT managers is plotting to exploit its buying power and finally take a stand on software usability. They're tired of productivity-sapping software packages that end users can't figure out, reports David Orenstein. So next month, IT managers from State Farm, Boeing, Fidelity, Kodak and Northwest Mutual will gather to test what they hope will become a standard way to measure software usability — before they buy.

Report starts on page 64.

MCI OUTAGE COMPENSATION DERIDED

Users: 'Token gesture' won't cover losses

BY CAROL SLIWA

MCI WorldCom Inc. executives last week offered 30 days of free service to up to 3,000 corporate customers affected by its 10-day frame-relay network problems.

But many customers said they view the two-for-one offer as a token gesture that won't begin to offset the actual losses they suffered when their

networks failed or experienced sporadic outages between Aug. 5 and Aug. 15.

"It's a shallow way of an-

swering this problem," said Rod Taitano, wide-area network manager at San Francisco-based State Compensation Insurance Fund, which intermittently lost its frame-relay connection to 14 of its 28 district offices during the outage.

"We have not accepted that [two-for-one] offer, and we are still reviewing our avenues of legal recourse," said Katherine Spring, a spokeswoman for the Chicago Board of Trade

TRADING AT CBOT was disrupted repeatedly by MCI's frame-relay outages two weeks ago

MCI, page 16

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THE CLASS OF 1999

If the grads we visited with are any indication, employers will find imagination, drive, dedication and know-how in this new crop of IT staffers. Page 50

BACK-TO-SCHOOL MARKET

A few companies are using the Web to make money by relieving parents of the stress of getting kids ready for school. Page 40

COMPUTERWORLD THIS WEEK

AUGUST 23, 1999

THEY'RE ISSUING CRAP AT THE SPEED OF LIGHT.

GREG AGARUNOV, PATENT RESEARCHER AND CONSULTANT, REFERRING TO THE U.S. PATENT AND TRADEMARK OFFICE'S 1998 ISSUANCE OF 125 PATENTS FOR SUPPOSEDLY NEW WAYS OF DOING BUSINESS ON THE INTERNET. SEE PAGE 1.

Government Proposes New Cryptography Bill

Would let agencies access encryption keys

BY ANN HARRISON

THE CLINTON administration has drafted a bill that would give law enforcement agencies access to encryption keys to decrypt information they suspect is related to a crime. But critics contend that the proposed legislation violates constitutional rights and might be unenforceable.

Opponents also fear that law enforcement officials could inadvertently modify or destroy a company's files as they recover encrypted information.

The drafting of the Cyberspace Electronic Security Act is being led by the Office of Management and Budget and the U.S. Department of Justice. It would give officials the ability to use a search warrant or court order to access keys needed to decrypt information. Information technology departments that hold employers' keys for data recovery would be forced to comply with these requests.

Although a draft of the bill noted that encryption is an important tool for protecting the privacy of legitimate communications and stored data, it also argued that the technology could be used to facilitate and hide unlawful activity.

That argument has been used to support other legislative initiatives such as the export controls on strong encryption. "This is just one in a long line [of] government attempts at regulating encryption]. The government bases all aspects of life that could remain private," said David Banisar, a senior fellow at the Washington-based Electronic Privacy Information Center.

Banisar added that key recovery provisions were also recently added to the Security and Freedom Through Encryption Act, which is pending in the U.S. House of Representatives.

Problems With the Plan

The Cyberspace Electronic Security Act proposes that law enforcement officials have access to decryption keys held by a third party. Although this is a strategy increasingly favored by companies that want access in their employees' data encrypted with a company-issued key, it's unlikely that criminals would deposit their keys with third parties. The act would, however, allow officials to also use search warrants to access decryption keys not held by third parties.

Another problem with the bill is that it could punish people who simply lose their keys, such as through a hard disk crash, said Andy Neff, chief scientist at VoteHere Inc., a Kirkland, Wash.-based company that's developing systems for online voting.

"How do you prove that somebody didn't, through no fault of their own, simply lose their key as opposed to refusing to turn it over?" said Neff, who attended Crypto '99, an international conference on cryptology in Santa Barbara, Calif., last week. ▶

Cryptographers Urge Review of Standard

Seek help choosing between algorithms

BY ANN HARRISON

Cryptographers at Crypto '99, the 19th annual international conference on cryptology, last week urged businesses and other users of encryption to help select the next Advanced Encryption Standard (AES).

The cryptographers pointed out that the AES will perform encryption tasks in a wide range of current and future applications involving 12-bit microprocessors, 64-bit microprocessors, 8-bit smart cards and other devices.

"It is a standard developed by cryptographers, with impact far outside cryptography," said Bruce Schneier, founder and chief technology officer of Counterpane Internet Security Inc. in Minneapolis and co-developer of the Twofish algorithm, which was selected as one of the AES finalists.

The National Institute of Standards and Technology (NIST) is soliciting comments on the five encryption algorithms chosen earlier this month as AES finalists. The algorithm selected will replace the weak Data Encryption Standard, which was adopted in 1977 and was once used widely by businesses and government agencies. The NIST report on the algorithms is posted on the Web (see box).

Attendees of the conference held at the University of California at Santa Barbara didn't expect that major weaknesses would be found in the algorithms. Instead, they said the AES will be chosen based on its performance, flexibility and ability to satisfy the encryption needs of businesses and other users.

"When AES becomes a standard, customers will want their encryption products to be 'buzzword-compliant,'" Schneier said, meaning that the algorithm will be used as a marketing term to prove that devices are compliant and interoperable with the standard. "They'll demand it in hardware, in desktop computer software, on smart cards, in electronic-commerce terminals and other places we never thought it would be used. Anything we pick for AES has to work in all these applications."

David Aucsmith, chief security architect at Intel Corp. and an attendee at Crypto '99, said he was impressed by the process for selecting the AES. He said Intel has been evaluating the performance and stability of the algorithms, ranking them relative to each other for Intel's upcoming 64-bit Merced chip. "It's always a trade-off," he said. "Should it be optimized for Pentium IIIs and Merced or smart cards?"

He noted that the AES will be either a compromise algorithm that runs on high-end and low-end systems or two algorithms that are optimal for each. If two are selected, Aucsmith said, manufacturers would have to build devices compliant with each algorithm — a strategy he doesn't support. After NIST proposes a standard next year, it will go through a formal government approval process and become a Federal Information Processing Standard for many international applications in 2001. ▶

Encryption Users' Opinions Wanted

Cryptographers urged encryption users to review the report "AES Round 2 Finalists" on the selection of the algorithms and submit their own critiques.

The report can be found at http://csrc.nist.gov/encryption/aes/round2/round2.htm. Comments on the algorithms must be submitted to www.nist.gov/aes by May 15.

Other businesses — especially financial institutions, which make the widest commercial use of encryption algorithms — should evaluate the finalists, said Crypto '99 attendee David Aucsmith, chief security architect at Intel. "In order to get the very best [Advanced Encryption Standard] we can, it should reflect the widest usage base," he said. — Ann Harrison

Microsoft Tightens Developer Testing Rules for Win 2000

Aims to allay users' reliability fears

BY DAVID ORENSTEIN AND SHARON GAUDIN

Microsoft Corp. wants software and device driver vendors to write code that's well tuned and tested so that Windows 2000 — under a lot of pressure to be stable — doesn't fail victim to third-party sloppiness.

Microsoft acknowledges that it's making a bigger stink with developers over reliability than ever before. In pursuit of its goal, Microsoft has mandated the following:

■ Drivers be tested more thoroughly for memory leaks and the like.

■ Applications must adhere to a more stringent specification to earn an "Optimized for Windows 2000" logo. "Our old logos were basically seen as a way to get stickers on the boxes," said Craig Bielinson, lead product manager. "This is much more rigorous."

■ Hardware and Windows 2000 DataCenter will run only on the systems that have been placed on a "gold" hardware compatibility list, which designates the hardware as fast enough and powerful enough to handle the system's beefed-up requirements.

"[Microsoft] has to get away

from the blue-screen-of-death perception," said analyst Bill Peterson at International Data Corp. (IDC) in Framingham, Mass. A survey of corporate information technology buyers released last week by IDC revealed deep user concerns about Windows 2000's reliability, and that could slow adoption.

But Neil McDonald, an analyst at Stamford, Conn.-based Gartner Group Inc., noted that Microsoft's push to get vendors to build software optimized code will force users to upgrade, because a Windows 2000-optimized application will no longer run on Windows NT 4.0.

Very Stable

Cameron Cosgrove, vice president of information systems at Pacific Life Insurance Co., said he will upgrade to Windows 2000 at the beginning of next year because the system has proved itself to be

very stable. Cosgrove said he doesn't want to see what he called an exciting new version of Windows fall prey to third-party sloppiness. "There does need to be stricter adherence to the new guidelines," he said.

Microsoft received similar encouragement from Bob Lee, vice president of intranet and distributed technology at Charles Schwab & Co. in San Francisco. Because applications cause more crashes than Windows itself does, he said, more

stringent development guidelines would help. "The lack of a rigid program is what causes a lot of problems in the NT space," Lee said.

Whether developers will heed Microsoft's demands is unclear.

The case for developers, according to Enrique Salem, chief technology officer at Symantec Corp. in Cupertino, Calif., is that writing to the specification adds costs.

But Salem said that in most cases, it behooves developers to follow Microsoft's recommendations, and Microsoft is eager to help. ▶

Microsoft Bills 'DataCenter' As a Win 2K Workhorse

But with only a peek at the specs to go by, some wonder how powerful it really is

BY SHARON GAUDIN

MICROSOFT CORP. hopes to bolster its push into the enterprise with what the company is billing as a big work-horse version of its upcoming Windows 2000 operating system called DataCenter.

The software version of the first peek at DataCenter's

specifications last week.

But some analysts and users said they wonder if DataCenter, which is expected to ship about three months after the other three versions of Windows 2000, will be powerful enough to handle companies' biggest and most important applications. With only early specifications and no actual software to test yet, users can

only go on promised features.

"Right now, Microsoft hasn't really introduced enough differentiation to make DataCenter compelling," said Neil McDonald, an analyst at Stamford, Conn.-based Gartner Group Inc. "It's more of a placeholder for future enhancements.... They're busy just trying to get the product out, and then they'll go back and try to flesh out what they can do with DataCenter."

Windows 2000, Microsoft's update to Windows NT 4.0, is coming out in four packages: Windows 2000 Professional for the client side; Windows 2000 Server for a basic network operating system; Windows 2000 Advanced Server to host critical Web sites and line-of-business applications; and Windows 2000 DataCenter for applications that require high availability, such as online transaction processing and data warehousing (see chart).

Craig Bielinson, a Microsoft product manager for Windows 2000, said DataCenter will be Microsoft's power play, offering four-node clustering and
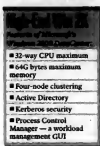
32-way processing. "This is for the application that can't go down," said Bielinson, adding that it's intended to replace Unix servers or ultimately even big iron.

More Power

But Microsoft will have to come up with plenty of power and reliability to get users to switch from Unix servers or mainframes.

"There's always an interest in getting more power," said James Whitaker, a Novell and NT design engineer at Nextel Commodications Inc. in Atlanta. "Our Unix boxes are running our big, mission-critical applications.

"Craig Bielinson, a Microsoft product manager for Windows 2000, said DataCenter will be Microsoft's power play, offering four-node clustering and

... we need to transition over to something else ... especially something I haven't even seen yet. I'd have to see some real power."

And McDonald said that power just isn't there yet. "They don't even have the ability to partition workloads. They have the foundation but no tools to do it," he said. "And four-node clustering? I'd expect more than that." ▶

	Windows 2000 DataCenter
💻	32-way CPU maximum
	64G bytes maximum memory
	Four-node clustering
✦	Active Directory
	Kerberos security
	Process Control Manager — a workload management GUI

MSN Messenger Protocol Pitched to Standards Body

BY DOMINIQUE DECKMYN

The instant messaging spat between America Online Inc., Microsoft and Yahoo Inc. continued last week, as Microsoft published the protocol for its MSN Messenger instant messaging service to make it easier for other developers to connect their instant messaging products with Microsoft's.

Microsoft is proposing its protocol as a draft standard to the Internet Engineering Task Force, which is developing an instant messaging standard called the Instant Messaging and Presence Protocol.

Tribal Voice Inc. in Scotts Valley, Calif., said it would connect users of its PowWow product to MSN Messenger using the protocol, possibly as soon as next month. But it's also trying to reach an agreement with AOL to connect with AOL Instant Messenger, said Richard Dym, vice president of marketing at Tribal Voice.

Tribal Voice claims Pow-Wow has 5 million users. It's also the technology behind AT&T Corp.'s IM Here service.

"Microsoft is doing the right thing," said David Ferris, president of Ferris Research Inc.,

a market research firm in San Francisco. But he said it's unlikely the MSN Messenger protocol will be approved as a standard in its present form because it offers fewer features than other protocols. "The [AOL] ICQ protocols have great richness, so it's unlikely [that Microsoft's] will be a walkover," Ferris said.

AOL, meanwhile, is following a different approach, signing agreements with other vendors to develop instant messaging products that link to its core, Lotus Development Corp., Apple Computer Inc. and most recently Novell Inc. have joined AOL. But the company bailed in an attempt to block other vendors — notably AT&T — from using the terms "IM" (for Instant Messaging) and "Buddy List." ▶

Eight-Way Servers Unleashed on Market

Lower maintenance, staffing costs eyed

BY STACY COLLETT

MOST MAJOR server manufacturers start their engines today as Intel Corp. officially releases its long-awaited Profusion eight-way chip set.

Users will have more server choices than ever with 20 manufacturers bringing eight-way products to the marketplace today in server configurations ranging from $20,000 to $80,000, depending on configuration.

Compaq Computer Corp., touting its ProLiant 8000 and 8500 servers, last week was the first. Hitachi Data Systems and Dell Computer Corp. announced their eight-way server offerings today. IBM and Hewlett-Packard Co. plan

PATRICK: Eight-way the way to go

launches early next month.

Intel's chip set, which gives servers the power of up to eight 550-MHz Pentium III Xeon processors, will also support more operating systems than ever, including Windows NT, Windows 2000, Santa Cruz Operation Inc. UnixWare, Sun Microsystems NT, Windows 2000, Solaris and Novell Inc. NetWare. But most server makers will offer NT as the standard platform.

Initial benchmarks show Intel-powered, eight-way servers can run about 37,000 transactions per minute. "That's about 50% to 60% higher than four-way," said Richard Fichera, vice

president of research at Giga Information Group Inc. in Cambridge, Mass.

Information technology departments whose four-way servers are reaching their workload performance limits — especially those with e-commerce applications — may want to check out eight-way servers.

Compaq is taking its new eight-way servers directly to the Internet market. Digex, a Beltsville, Md.-based Internet service provider, plans to buy close to 100 ProLiant 8500s for its large database and application servers, said Bobby Patrick, vice president of strategy and product development.

Barnesandnoble.com in New

York plans to purchase more than a dozen eight-way servers to drive its enterprise resource planning system and front-end Web farms this Christmas season, said Alan Bourassa, director of distribution and fulfillment systems.

Eight-way servers can also cut maintenance costs and staffing needs. Customers who want to reduce the number of servers that handle e-mail applications, for example, could use several dozen eight-way servers instead of a hundred two- or four-way servers, said Amir Ahari, an analyst at International Data Corp. in Framingham, Mass.

Observers said the Profusion chip set inches Intel closer to the performance of RISC-based systems. "The workload you can get through the largest single Unix system today is three times greater than the Intel-based system," Fichera said.

Overall, Ahari emphasized caution. "It's untested right-way technology, and the applications and operating system support for it are still very limited."

Banks Cheer Fed Approval Of Electronic Statements

But issues like Y2K could delay effort

BY KATHLEEN OHLSON AND DOMINIQUE DESCHAMPS

Banks reacted enthusiastically last week to an interim rule from the Federal Reserve Board that would allow them to send their customers their account statements electronically rather than through the mail.

The ruling is part of a wider-ranging proposal that would further extend electronic communication with consumers to include required disclosures about loans, leases and other exchanges.

To send statements electronically, banks and other institutions would first have to obtain a customer's approval and confirm that the customer's computer can receive electronic disclosures. Disclosures for business that must be

done in person would still require paper forms.

According to Gary Caulfield, executive vice president of information management at First Hawaiian Bank, a subsidiary of BancWest Corp. in Honolulu, "the devil is in the details, but the Fed seems to be recognizing the changes in financial services."

Banking analyst Bill Bradway at Meridien Research Inc. in Newton, Mass., said the proposal appears to contain more

JUST THE FACTS

Consumers Not Ready?

In a Pitney Bowes-sponsored survey of 1,013 U.S. households:

- 92.9% of U.S. households with e-mail access order printed mail by bill, bank statements or other financial reports
- 80.3% consider regular mail more secure than e-mail

SOURCE: PITNEY BOWES INC. STAMFORD, CONN.

detailed guidelines than a March 1998 proposal. But he said most banks' preoccupation with year 2000 issues and consumers' preference for paper statements could hold the effort back.

Still, the benefit to banks could be huge. Tom Kelly, a

spokesman for BankOne Corp. in Chicago, said his bank's credit-card subsidiary, First USA, already sends statements to more than 1 million customers by posting them on a secured Web site, saving 30% to 40% over the cost of printed statements.

Bank Regulators Go Online

BY PATRICK THIBODEAU
WASHINGTON

Federal banking regulators are adding information technology jobs and preparing to shift resources from Y2K as part of a stepped-up effort to monitor Internet banking offerings.

For instance, the National Credit Union Administration hasn't been examining online activities, because the agency said it has "been totally focused on Y2K compliance," spokeswoman Leisa Bullock said. But the agency is turning its attention to online and will shift year 2000 IT employees in that direction.

Online banking follows the same rules as regular banks and has been around for a long time. If regulators act at some

new way toward it, "it's going to be a reaction [to trouble] rather than proactive," said Octavio Marenzi, financial analyst at Meridien Research Inc. in Newton, Mass.

The U.S. General Accounting Office, however, said a review of bank examinations pointed to problems at nearly half the online operations, such as a lack of policies and procedures to guide online banking operations, a lack of staff and a focus on Y2K efforts.
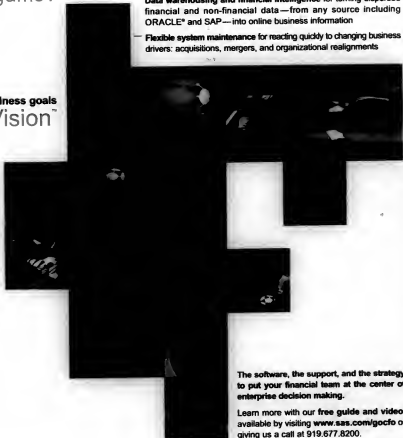
But Peter S. Browne, a senior vice president at First Union Corp. in Charlotte, N.C., said the study was out-of-date and didn't reflect the progress that banks were making in minimizing online banking risks.

New IBM Desktop Line Eases Management

BY MATT HAMBLEN

Targeting the desktop management quagmire, IBM last week announced a PC line preloaded with tools said to slash rollout and servicing costs.

At the low end, the 433-MHz 300GL desktop will include low-cost Celeron processors and will be priced at $849, not including a monitor. The machines will be packaged with IBM's latest version of Universal Management Services (UMS) tools, which let a network manager remotely administer a system. With UMS, a manager can download an entire software image to all the PCs over a network as well as monitor and administer the machines throughout their lifetime.

Analysts said such tools have been available to the largest business users for months from several vendors but weren't always free.

Saves Time, Money

At travel insurance company World Access Service Corp. in Richmond, Va., managers used a previous version of UMS to deploy 105 IBM 300PL desktops with Pentium processors in March. It took the staff only 10 hours for the deployment, down from the usual 157 hours it took without the PC management tools, said Bobby Schmidt, network administrator at World Access.

The time savings meant the company saved about $6,000 on the deployment, a figure that will grow as World Access uses the tools to monitor PCs and provide software upgrades.

"We're growing a lot at this company and need to quickly upgrade machines with the appropriate operating system and applications, so this tool provides long-term benefits," Schmidt said.

World Access is adding another 50 desktops by November and will use the IBM tool in that deployment.

Mid-Market in Mind

IBM and analysts said UMS works in networks with various PC brands, not only IBM machines. "These tools save time in troubleshooting and solving problems, something not really available in the small and medium business markets until now," said Deepinder Sahni, an analyst at Access Media International in New York.

In addition to UMS, IBM offers free tools to provide basic maintenance and data protection for network managers. One tool performs emergency data backup if an operating system gets corrupted or the hard drive fails.

Looking for Mr. Warehouse

Workers with data warehousing and mining skills are among hardest to find

BY STEWART DECK

NOW THAT data warehousing and mining projects are becoming the keystone to corporate marketing campaigns, IT staff recruiters are finding people with those data-crunching skills a top priority.

In fact, data warehousing and mining are some of the hottest skills in the information technology field, according to a recent study by Hewitt Associates LLC in Lincolnshire, Ill. Many of the 224 companies surveyed said they anticipate a shortage of workers with those particular skills.

Experts said IT recruiters should look for a combination of technical and business skills to find a warehouse winner.

John Ladley, a research fellow at Meta Group Inc. and president of Chicago-based consultancy Knowledge Interspace Inc., advised looking for actual hands-on warehousing and mining experience and exposure to decision-support projects. "A background in measurement and statistical analysis ... and experience building an executive information system tells you they understand data quality issues," Ladley said.

What It Takes

Darrell Grekul, a business analyst who helps run a data warehouse at TimberWest Forest Ltd. in Vancouver, British Columbia, said a good warehouse résumé shows time spent with end users to meet
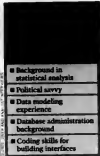
their data needs and persuading divisions to give up data "ownership" for the greater good of the overall project.

Frank Gillett, an analyst at Forrester Research Inc. in Cambridge, Mass., said experience with data extraction, conversion and modeling will be in demand in the next few years.

Paper Credentials

Analysts warned that some warehousing skills may look good on paper but won't be that useful. "Ten years' experience sometimes is just one year of experience repeated 10 times," said Herb Edelstein, an analyst at Two Crows Corp., a Potomac, Md., consultancy.

"Really good people it this area are at a premium, so you have to be willing to develop your own," Edelstein said. Try grooming smart, enthusiastic employees who can grow into the job, he advised.

and an understanding of analytical ends. And business experience shows whether the applicant understands what drives a company and its data support projects, he said.

Experts said political skills are key to data warehousing success, which requires working with end users to meet

- ▢ Background in statistical analysis
- ▢ Political savvy
- ▢ Data modeling experience
- ▢ Database administration background
- ▢ Coding skills for building interfaces

IT Spices Up $3.6 Billion Supermarket Buy

But future of online operation uncertain

BY SAMI LAIS

Sophisticated networks and information technology at Hannaford Brothers Co. were among the supermarket chain's attractions in its $3.6 billion acquisition last week by Food Lion Inc., said a Food Lion spokeswoman.

For example, Scarborough, Maine-based Hannaford has just finished expanding its Asynchronous Transfer Mode (ATM) network from 46 Maine stores to the entire chain. That move was precipitated by satellite outages last year that took out Hannaford's networks, leaving many stores unable to transmit daily sales data, said William Homa, Hannaford's IT director.

"Yesterday, I turned off the satellite," nearly two months ahead of schedule, Homa said.

Hannaford is one of the only 2% of retailers that use costly ATM, according to a May PricewaterhouseCoopers survey. But because Maine has one local access and transport area, Hannaford pays half the usual cost of ATM service in other parts of the country. Homa further trimmed costs by connecting via T1 lines, rather than faster, pricier DS-3 lines.

"We went live with [pre-release Cisco Systems Inc. T1 ATM routers] in our four biggest stores just before Christmas" with no problems, Homa said.

Although videoconferencing, used mainly for meetings, is available only in the four executive offices, "we can turn that on in a nanosecond" at other sites, he said.

Hannaford paid $1 million for the routers and other hardware and will pay $1.6 million annually in network costs.

Hannaford has been out in front online, too. In 1996, it was an early entrant into the online grocery business with its Homeruns.com, based in Auburndale, Mass. But plans for Homeruns.com, which has been losing money, are still up in the air, the Food Lion spokeswoman said.

Losing Money

"All the online groceries are losing money, and it's going to be that way for some time," said Jennifer Marino, an analyst at EMarketer, a market analysis firm in New York.

Hannaford is also "very well-known for their computer-based training. Food Lion can

learn from that," said the Food Lion spokeswoman.

Your 2000 doesn't seem to be an issue in the merger. Both companies said they are nearly finished with year 2000 work. "We're tying up a few loose ends and expect to be finished by the end of August," Homa said. All "significant suppliers have notified us that they're in compliance, and we're fairly comfortable with that."

At Food Lion, in Salisbury, N.C., "there's a little new software to be installed, but we've been testing extensively, and we're confident we'll be OK," the spokeswoman said.

Over coming months, the two companies will be looking at best-of-breed practices each has implemented, including in IT, said a Hannaford spokeswoman. Hannaford will operate as a subsidiary of Delhaize America Inc., Food Lion's new holding company.

Industrywide, acquisitions are likely to continue, said Michael Shea, an analyst at D. A. Davidson & Co., an investment bank in Portland, Ore., to get "the greater efficiencies in purchasing, advertising and distribution. And there are still quite a few others out there that's Hannaford's size."

JUST THE FACTS

Grocery Merger

FOOD LION INC.
Headquarters: Salisbury, N.C.
Business: Food Lion, Kash 'n' Karry, Save 'n Pack
Number of stores: 1,258
Locations: From Pennsylvania to Florida
1998 revenue: $10.2B

HANNAFORD BROTHERS CO.
Headquarters: Scarborough, Maine
Business: Hannaford, Shop 'n' Save
Number of stores: 152
Locations: New England, New York and the Southeast
1998 revenue: $3.9B

ETrade Plans After-Hours Stock Trading

BY THOMAS HOFFMAN

ETrade Group Inc., the nation's second-biggest online brokerage, last week announced plans to offer after-hours trading to its customers beginning next month.

ETrade isn't the first brokerage to dive into extended-hours trading, but it's the largest so far, and it will trade stocks that are listed on both the New York Stock Exchange (NYSE) and the Nasdaq Stock Market Inc.

Datek Online Brokerage Services LLC, another big broker that's already providing after-hours trading, offers users only Nasdaq-listed stocks through Island ECN, an electronic communications network (ECN).

After-Hours Pioneers

ECNs are trading networks that were originally crafted to offer institutional investors an alternative to trading stocks on the Big Board or Nasdaq. But as the NYSE and Nasdaq continue to stall their respective entries into after-hours trading, ECNs have begun to pioneer after-hours trading for individual investors.

To strengthen its position, Palo Alto, Calif.-based ETrade is teaming up with Instinet Corp., which is the biggest ECN that operates after traditional market hours, said Larry Tabb, an analyst at TowerGroup in Needham, Mass.

The NYSE and Nasdaq markets close at 4 p.m. Eastern time. ETrade plans to offer trading from 4:00 to 6:30 p.m. when its service begins next month.

Last month, ETrade's biggest competitor, Charles Schwab & Co. in San Francisco, announced it had formed a joint venture with Fidelity Investments and broker Spear, Leeds & Kellogg LP to create another alternative-trading network that's expected to eventually offer after-hours stock trading.

Tabb said ETrade's move will force Schwab to begin offering extended-hours trading "within a few months." ♦

BRIEFS

Schwab Traders Can Soon Go Wireless

Brokerage firm Charles Schwab & Co. has entered into a development relationship with Aether Technologies International LLC, a wireless integrator and service provider. The companies plan to offer a new cross-platform wireless trading service, which will be introduced by year's end.

The service will let Schwab customers use a variety of pagers, handheld computers and cellular phones for trading.

Citigroup Names Trainer New CIO

As expected, Citigroup Inc. has named Tom Trainer as its new CIO. Trainer, former CIO of Reebok International Inc. and Eli Lilly & Co., joined the New York-based financial giant in April and was reporting to Mary Alice Taylor, Citigroup's head of global operations and technology.

An internal memo sent out last week by Citigroup's co-chairman stated that Taylor will be leaving the firm.

Sun Unveils Specs for Java Microprocessor

Sun Microsystems Inc. last week unveiled details of the new Microprocessor Architecture for Java Computing, Chips based on the architecture will be able to process complex graphics and voice data at high speeds for online multimedia applications, wideband telecommunications networks, medical imaging systems and e-commerce applications.

Short Takes

MICRON ELECTRONICS INC. bought the outstanding stock of NETLIMITED INC., a Los Angeles-based Internet content and applications hosting provider that operates under the name HOSTPRO. . . . TOYOTA MOTOR SALES USA INC., the American distributor of TOYOTA MOTOR CORP., will standardize on DELL COMPUTER CORP. desktop PCs, servers and storage over the next three years.

Building Industry Braces For IT, Online Onslaught

Web portals are only the beginning as broadband Internet beckons

BY SAMI LAIS

IT COMING MONTHS, richer Web portals and broadband networking will shake the foundation of the low-tech construction industry — from the way buildings are designed, specified and even built.

In November, a slew of competing approaches to automating the industry — from online 3-D product catalogs to extranets connecting architects, suppliers and builders — will vie for attention at a major industry trade show in Chicago.

Replacing paper product information with electronic versions could save $40 billion annually in the U.S. and $80 billion worldwide. More than 10% of the annual $400 billion building construction market is spent on disseminating information, said Arol R. Wolford, president and CEO of CMD Group, a construction information supplier in Atlanta.

That's a good beginning, said Christine Hlunka, communications director at interior designer HLW International LLP in New York. Currently, architectural specifications forms are electronic, but spec writers must thumb through shelves of product catalogs, which often are outdated before they're printed, she said.

Some industry catalogs are already online. McGraw-Hill Co.'s "Sweet's Catalog" is available at F. W. Dodge's Web portal, and CMD's "Architect's First Source" is at CMD's portal. Both industry bibles are available via the Washington-based American Institute of Architects (AIA) Web site, too.

"Computers have been used in the industry, but no one has pulled [information technology] together around a business process," said Geoffrey Beck, senior consultant at Patricia Seybold Group in Boston.

Until now, that is. CMD and F. W. Dodge are competing with trade group AIA and Web-based workflow software maker BidCom Inc. to play online host to the building community, said Darrell Lewis, AIA director of electronic publishing.

There is grassroots support for Web-based collaboration among architects, suppliers and builders, Lewis said, but getting construction sites online may take a bit longer.

To that end, San Francisco-based BidCom is integrating 3Com Corp.'s Palm handheld devices with its project management software so that builders "can gather information in the field, come back to the office and sync up with our servers," said Daryl Magana, BidCom president and CEO.

That sets the stage for a broadband extranet, Wolford said, with 3-D product catalogs and installation instructions, collaborative computer-aided design and virtual reality technology (see story below). Other industry IT initiatives have failed, Beck said, because "bandwidth has been a problem. But with the advent of broadband and high-speed Internet access," that's going to change fast, he said. "It's like building the interstates, where the speed of access changes the character of commerce." ◆

Broadband Pilot Project Brings Architects, Builders Together Online

NEW ORLEANS

A July pilot of a broadband intranet for architects, designers, builders and suppliers was a hit at the recent Architects Technology Summit here.

The intranet, called CMD Exchange, builds each user a personalized home page for e-mail, weather reports, forms, construction news, project leads, requests for proposals, building codes, 3-D catalogs, collaborative design and virtual reality applications.

Via the intranet, "as much as 80% of a building will be constructed in [virtual reality]" before actual groundbreaking, said Scott W. Wuerl, CEO of pilot participant NBBJ Architecture in Seattle.

CMD Exchange began as a Web portal, but, "We realized we needed to rethink how we do business. . . . it had to be strongly visual, and a [28.8K bit/sec.] connection wasn't going to do it," said Arol R. Wolford, president and CEO of building information supplier CMD Group in Atlanta.

To handle the graphics, the intranet runs on a TV-or-faster line. Raymond Cheng, CEO of Web developer Connectiv in Bellevue, Wash., brought in Computer Associates International Inc.'s Global Professional Service to help build the intranet, using CA's Jasmine TND application development software.

Several architects at the conference signed up for an expanded, ongoing pilot. CMD hasn't yet devised a pricing structure.

— Sami Lais

HP Details Internet Strategy, Partnerships

HP World highlights include Apps-on-Tap and vertical portals

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co. championed a well-received Internet strategy and announced a new partner at last week's HP World user conference in San Francisco.

Led by newly appointed CEO Carly Fiorina, various company executives gave users a glimpse of the company's future plans, which will focus mainly on delivering rentable Internet applications, building vertical portal sites and developing dynamic brokering middleware for the Web.

HP also announced a partnership with Oracle Corp. under which the companies will work on integrating the Oracle8i database and related Internet products with HP technologies like its E5peak brokering software.

HP will work with Qwest Communications International Inc., an Internet provider in Denver, and Intelisys Electronic Commerce LLC in New York, a provider of Internet procurement products, as part of its Apps-on-Tap strategy to let users rent critical corporate applications such as enterprise resource planning programs.

"HP has become more focused," said Ralph Fusco, information technology director at Liz Claiborne Inc. in Bergen, N.J. "It is the reason why the company has become very much a part of the Internet culture at our company."

On the hardware side, HP last week demonstrated database, multimedia and Internet applications running on a simulated Merced server at HP World. Merced is the forthcoming 64-bit chip jointly developed by Intel Corp. and HP.

The first HP servers based on the systems should start shipping by mid-2000, said Eric Clow, an HP technology marketing manager. He added that the company will continue to offer its PA-RISC systems. ◆

Job Done, Social Security's Y2K Leader Is Moving On

Y2K lessons: Software development is key, CIOs get seat at table

BY PATRICK THIBODEAU
WASHINGTON

T he U.S. Social Security Administration has led other large federal agencies in repairing the year 2000 problem. But the person who is responsible for spearheading much of that effort is retiring and beginning a second career.

Kathleen Adams, the agency's assistant deputy director of systems and chairman of the year 2000 commit-

tee of the federal government's Chief Information Officer's Council — said last week that she plans to work at SRA International Inc., an information technology consulting and systems integration firm in Fairfax, Va., as vice president of strategic accounts.

Q: What have you learned from repairing the Y2K problem?

A: I don't know if it's year 2000 per se, but the time we really have been looking at is improving our software de-

would not be going.

I'm taking what's called an "early out" retirement.

As a career employee, I'm about as high up as I'm going to go. Jobs above my level are political appointees.

Q: What have you learned from repairing the Y2K problem?

A: If we had not completed everything that we set out to do and finished our program, I

velopment processes. We always tend to think of programming and IT as being very creative, and it should be, but the application of it should

be more methodical and disciplined.

Q: What has all this taught you

about the role of IT professionals in large organizations?

A: Y2K has really made people realize the extent to which we depend on automated systems and computers to do business. And in many ways I think it's brought the CIO more to the table, if you will, in a number of corporations and governmental agencies.

Q: How can federal agencies compete more effectively with the private sector for IT employees?

A: What the government can offer, as long as we keep the salaries relatively close [with private industry] ... is [the] value of working in public service.

We have a great mission. There are 48 million [people] who depend on us to get their payments every month. For the 27 years that I've been here, I always knew that what I was doing mattered.

> ["Y2K] brought the CIO more to the table."
> — Kathleen Adams, on leaving the Social Security Administration

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MCI's Outage Compensation

which estimated that it lost 180,000 contracts during the outage. "It wasn't just the exchange that lost revenue. It was the members and customers who lost seven out of eight days of trading opportunities," Spring said.

As unhappy as many customers are, they could be getting less.

Hank Levine, a Washington attorney whose firm represents more than 50 MCI large corporate customers, said most business customers are entitled to virtually nothing under the tariffs MCI filed with the Federal Communications Commission. Tariffs take precedence over any individual contracts negotiated with telecommunications carriers, Levine said.

Credits Are Limited

Only big firms with aggressively negotiated deals stand a chance at getting appropriate credits, Levine predicted. Others will get the run-for-one credit. Some of those may consider filing a formal complaint with the FCC, claiming MCI's offer was unjust. But those complaints can take a year or two to resolve, Levine said.

MCI CEO Bernard Ebbers

said there may be certain extenuating circumstances that his company will want to consider for some customers. "But we will handle that certainly on a case-by-case basis. You know, obviously, our objective is to retain our customers," he said.

What particularly irked some customers was the length of time it took MCI to decide to roll back to its old equipment from Murray Hill, N.J.-based Lucent Technologies Inc. — the software that had been in place before the outage began. The frame-relay network congestion occurred as MCI was attempting to upgrade to more scalable, feature-rich Lucent software, but the companies have yet to determine the root cause of the problem.

"It went on for 10 days, and that had a severe impact on a lot of customers," said Bill Bartkus, vice president of information systems at Travel-Centers of America in Westlake, Ohio. "I think that was a long time to come to the conclusion that they came to."

Bartkus said his company will ask for a minimum of two days of service plus completely painful network to run side

bills incurred when it went to its Integrated Services Digital Network and dial-up backup system during the outage.

The compensation offer "ignores the damage to our reputation and the reputation of our wholesale [Internet service provider] customers, and it fails to recognize retail [Internet service providers] that have gone out of business because of this," said Mark Stutz, a spokesman for RMI.Net Inc.

The Denver company's Data Xchange Inc. division couldn't provide service to 66 of its ISP Internet protocol customers

and those customers, in turn, couldn't provide service to their customers.

"I think they should really sit down with each and every client and see what they actually lost," Tatiano said. "Every client is going to have a different loss factor. Why are you just going to give out a balloon payment of two-for-one? They have to ask themselves: 'Is this really fair?'"

Noting that his company has had price complaints with MCI, Tatiano said it plans to look at another carrier (see related story below).

Electronic Data Systems

Corp. is a partner of MCI's and has no plans to move elsewhere, a spokesman said. But the company is still assessing the effects of the brownout — which included the sporadic loss of 5,000 of the 16,000 automated teller machines it owns or operates.

"What we're concerned with in 24/7, 365 [days per year] uptime," said Bill Duncan, marketing director at EDS's consumer network services in Morris Plains, N.Y. "We're concerned about our customers. I don't think that token [MCI offer] makes up for the hurt they're feeling." ∎

Changing Frame-Relay Network Carrier Can Be Difficult

Some disgruntled corporate customers of World MCI's frame-relay service said they're considering switching carriers. But industry analysts warn that won't be easy.

"It's much easier to move from one long-distance provider to another than to move from one frame-relay network to another," cautioned Jay Pultz, an analyst at Gartner Group Inc.

"You're impacting all of the locations connected to the network, the applications on the network and the business itself again," said Liza Henderson, a consultant at TeleChoice Inc. in Tulsa, Okla. "So unless [a company] builds a completely parallel network to run side

by side to do the migration, it can expect some transition downtime."

Companies might opt for a phased migration, Henderson said, but even that can be difficult and time-consuming. "It depends on how big the network is and whether or not you can segregate locations," she said.

Before making any decisions, companies should recognize that the software upgrade problem plaguing the MCI frame-relay network could affect any carrier as it scales to accommodate more customers, analysts said. AT&T Corp., for instance, experienced a widerreaching, 23-hour outage in April last year. (It credited customers for

the amount of time needed to identify the root cause of the April 13-29 outage.)

"It's time that enterprises assumed that these kinds of failures will happen and put in backup that protects them," Pultz said. "And they need to pressure their carriers to improve the reliability of their networks."

Two of MCI's biggest rivals, AT&T and Sprint Corp., said they're not offering any special deals to induce unhappy customers to switch. But an AT&T spokeswoman said the company has seen an increase in customer inquiries as a result of the MCI outage. — *Carol Sliwa*

Windows NT

▲ Enterprise Wise
Hiring consultants vs. contractors:

By Steven Gould

I am frequently asked by my clients to expound on the differences between consultants and contractors. Many, if not all medium and large companies with an IT department frequently use these third-party ties. It's important for me to state up-front that I'm a professional consultant.

The line between the roles of a consultant and a contractor is thin — and sometime it blurs. Some of the more experienced and business-minded contractors may be able to provide some of the services normally provided by a consultant. A consultant, however, should always be able to fill a contractor's position.

When hiring a contractor, you typically deal with one of the many "body shops" and review a handful of resumes. You then select the individuals whom you are interested in interviewing based entirely on their specific job skills. For example, if you know you need a Visual C++ programmer, you try to identify someone with Visual C++ experience.

The people you interview in this way are effectively individual contractors represented by a larger contracting agency. As their contract with you approaches its end, they are likely to begin

Standardizing IT environments viewed as
Microsoft, Compaq offering critical components for integration

If you're running a typical Windows-based IT environment today, chances are good that it consists of more than one Windows operating system. Your users could be running Windows 3.1 and Windows 95, or Windows 95 and Windows 98. Count Windows NT as part of your environment, or throw a few Unix boxes on top, and you'll soon have your network administrators running in circles without a compass.

So what do you do? Standardize.

Standardizing your software and hardware offers a wealth of benefits. It helps you reduce overhead, improving your bottom line while minimizing potential headaches for network administrators and service and support teams.

So, how do you as an IT manager standardize these desktop environments easily and efficiently? What hardware and software systems should you implement to make your assorted Windows software (and, sometimes, software for Unix systems) operate in sync? How do you make the transition to a standardized environment easier for administrators, while at the same time increasing the efficiency of network management after the environment is standardized?

Buying hardware and software is easier, faster, and cheaper when the hardware and software are standardized. Having your organization choose one or two specific platforms, operating systems, and software-configuration "profiles" to create a consistent, standardized IT environment enables you to work with vendors to purchase equipment and software in larger quantities at discounted prices.

Additionally, it takes less time to buy hardware and software when those purchases go through a central department, such as the MIS department. When individual departments make their own purchases, they typically have to complete a purchase order for each piece of equipment or software they want to obtain. This lengthens the procurement process and places a heavy administrative burden on each department, says Mike Clark, Vice President of the High-Availability Segment for Compaq Computer Corp.'s Industry Standard Server Division.

If individual departments, such as marketing or accounting, are left on their own to determine what hardware and software to purchase for their end users, their purchases are likely to be inconsistent with the rest of the organization. This moves the organization further away from a standardized IT environment. A central purchasing department enables the organization as a whole

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Advantage

the important issues to consider

looking for their next assignment, since they are typically paid by the hour, and only for those hours billed.

When dealing with contractors, you will find that they typically do only the task or tasks that you assign them, leaving you in total control of the project scope, deadlines, and budget. This can be a very beneficial relationship for you, your company, and the contractor.

A consultant is a full-service, experienced professional who walks in with a broad range of skills and a good business perspective. An effective consultant is better able to advise you about different technologies, and the advantages and disadvantages of each when applied to your business situation. A consultant is able to assist

key to productivity
migration efforts

to channel acquisition requests more efficiently and better monitor which hardware and software is running in each department.

Standardizing hardware and software configurations across the enterprise allows your organization to manage inventory better, because the software running on all systems will be familiar

you with strategic planning and goal setting, provide full life-cycle support, and help you meet your deadlines. In this way the consultant shares, and in some cases owns, responsibility for the success of the project.

Consultants should not only accomplish the immediate task at hand, but also provide a complete business solution, making your job as an IT manager easier.

In most cases, consultants work for a large, diverse consulting company. This enables them to draw on a substantial pool of talent, both in technical and business arenas. The relationship between you and a consultant is much more than a relationship between two individuals; your relationship extends to the entire consulting organization. This type of relationship often lasts longer and is beneficial to all involved.

For more on consultants vs. contractors, visit www.WindowsNT-Advantage.com

to you. Microsoft's Systems Management Server 2.0 (SMS) helps network administrators manage both Windows-based desktops and servers and the software they're running. It provides your network administrators with inventory management, distribution, and diagnostic tools for both 16-bit and 32-bit Windows-based clients.

Point of View

Repurposing the
South China
Morning Post

Windows NT

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Senators May Talk To Chemical Firms

No major safety issues apparent, but officials say they need to know more

BY PATRICK THIBODEAU
WASHINGTON

WHEN DEC. 31 arrives, chemical maker Celanese Ltd. will have extra people on duty and others on call. The company's emergency command center will be on watch for problems at its 30 worldwide sites, but especially at those in time zones well ahead of its Dallas headquarters.

If a year 2000-related problem develops at its Singapore plant, for instance, that information will be relayed to headquarters. "If one site has a problem, the other sites will have a chance to learn from it,"

said John Susil, process safety manager at Celanese.

Susil said he believes Celanese has a good handle on Y2K. But the same can't be said for the chemical industry at large. U.S. officials said they know little about the industry's year 2000 readiness, especially among medium-size and small manufacturers and handlers.

The White House, at the urging of the Senate Special Committee on the Year 2000 Technology Problem, expects to meet late this month with chemical producers and trade groups on the Y2K risks posed by chemical manufacturing processes.

"At this juncture, there is no

indication that there are major safety issues" in the chemical industry, said White House Y2K czar John Koskinen. But "we don't have enough information to conclusively determine that."

Chemical manufacturing makes extensive use of computer controls and embedded systems. Those systems, industry experts say, are built with numerous safeguards and were designed to safely shut down if

power is lost or system problems develop.

"I have a hard time conceiving of things that can go wrong because of Y2K that are new and different," Susil said.

But there could be "consequences that aren't yet understood," said Gerald Poje, year 2000 coordinator at the U.S. Chemical Safety and Hazard Investigation Board in Washington. "The word vigilance is quite important in this area." The board has been urging state governors to take steps to check chemical facilities.

Critics said Congress and the White House haven't done enough to force Y2K compliance by chemical companies. "It was more important to pass legislation to protect companies that create problems," said Leon Kappelman, head of the Society for Information Management's Year 2000 Special Interest Group in Chicago, referring to a Y2K liability-limiting bill signed by the president.

In a 85-year period, there were 600,000 chemical incidents that resulted in more than 2,250 deaths and 20,300

injuries. Of those incidents, 240,000 were caused by mechanical failures, but the U.S. Chemical Safety Board doesn't know how many were computer-related.

Computer systems disruptions can be critical. On June 10, a gasoline pipeline operated by Olympic Pipe Line Co. exploded in a park in Bellingham, Wash., killing two 10-year-old boys and an 18-year-old man, and releasing thousands of gallons of gas. The cause of the explosion hasn't yet been determined.

But the U.S. Office of Pipeline Safety said there were problems with the supervisory control and data acquisition system, which controls the pipeline, that may have inhibited operators from controlling the problem. An advisory was issued to all gas pipeline facilities. ◗

Internet Users Prepare for Y2K Problems

White House says services will be OK

BY PATRICK THIBODEAU
WASHINGTON

White House assurances aside, corporate users aren't assuming the Internet will be year 2000 ready. They're making contingency plans, checking the status of Internet service providers and, in some cases, buying satellite telephones for backup communications.

The White House last week said it wasn't expecting significant Y2K-related problems with core Internet services — the backbone and the root servers that contain domain information. "The basic core of the Internet appears very likely — in fact, extremely likely — to function without difficulty" past Dec. 31, said John Koskinen, the White House Y2K czar.

But he said the White House couldn't rule out outages among the 200,000-plus networks that make up the Internet.

Scattered outages aren't unusual. The system is redundant "and designed to survive disruptions," said Barbara Dooley, president of the Commercial Internet Exchange in Herndon, Va. the Internet's favor is the relatively young age of its underlying technologies. It's "not saddled with legacy mainframe programs, languages and associated problems," she said.

Still, companies are being cautious.

Electric utilities, which share power-generating capacity schedules via an Internet-based application, have purchased satellite telephones to use in the event of Internet or telephone outages, said Ronald Parks, manager of computer operations at the Orlando Utilities Commission, a 60,000-customer electric utility in Florida.

But Parks said he believes competition is forcing Internet service providers to ensure that their systems are compliant. "I'd hate to be the only ISP that was down because of a Y2K problem," he said.

Charles Schwab & Co. in San Francisco has been checking the Y2K plans of its Internet providers. If problems occur, though, they will be helped by the fact that Dec. 31 arrives on a Friday, when U.S. financial markets will be closed for the holiday, company spokesman Greg Gable said.

Customers will be able to reach the company via telephone or through branch offices. "There is always an alternative way," Gable said.

Analysts said users should

be prepared. A company "needs to determine how long they could withstand a problem" with the Internet, said Lynn Edelson, a Y2K and risk management expert at PricewaterhouseCoopers in New York.
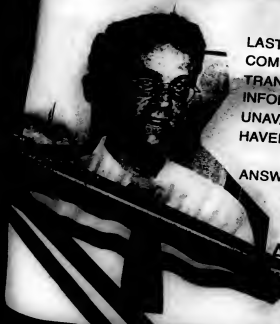
Of more concern, said Edmund Yee, network manager of Chevron Canada Ltd. in Vancouver, British Columbia, is power supply. Chevron will shut down noncritical parts of its network before the date change to prevent fluctuation damage. Although the company uses the Internet for e-mail, Web hosting and some transactions, "it's not something that's life or death for us," he said.

[box with bulleted list, partially legible:]
- Not all Internet service providers have reported their status. Users are advised to check with them.
- Companies with a critical need for Internet service...
- Core services used by Internet service providers such as root name servers, exchange points and back-...

Gartner Says Strides Made

BY RICK SAIA

The world has awakened to the year 2000 problem and is making great strides toward minimizing its effects come Jan. 1, according to a new Gartner Group Inc. report.

"We've seen tremendous change" in the U.S. and abroad, in many industries as well as in small and medium-size businesses, said Lou Marcoccio, Gartner's year 2000 research director.

Marcoccio presented the Stamford, Conn., information technology research and advisory firm's final Y2K report of 1999 last week. He predicted Y2K failures will increase in the second half of this year, peak in January and begin to trail off in next year's third quarter.

But come New Year's Day, Marcoccio added, few Americans will feel the effects of the date change. "We don't expect any real significant problems to the general public" on Jan. 1, he said.

Gartner also cited progress around the globe. It said many countries made "significant progress" on Y2K in the second quarter. But Marcoccio cited Russia and India as two large nations at highest risk of failure. ◗

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Walgreen's To Launch Internet Pharmacy

Back-end integration effort will allow customers to pick up orders in stores

By JULIA KING

WALGREEN Co. one of the nation's largest retail drugstore chains, will launch a new Internet pharmacy next month, joining arch rivals CVS Corp. and Rite Aid Corp. plus several new dot.com ventures in the charge to capture online customers.

In addition to online ordering, Walgreen's new Web site will give customers access to their prescription histories and information about medications from third-party medical sources, including the Mayo

Clinic. Walgreen's also plans to add more health and beauty products to the Web site by year's end.

Because the new Web site is fully integrated with the back-end systems used by the company's 2,700-plus brick-and-mortar locations, new and existing customers will be able to order online, then pick up their medicines at the neighborhood store, if they wish. This is one of the key capabilities that back-end integration affords hybrid retailers with both a real-world and online presence.

By contrast, pure-play Internet pharmacies, such as Belle-

vue, Wash.-based Drugstore.com and Planet RX Inc. in South San Francisco, Calif. take orders online for next-day delivery.

Walgreen's currently offers prescription refills on the Internet for existing customers only. The new, expanded Web site will allow customers to fill new prescriptions, which will be validated using the same computer systems the company's in-store pharmacists use to validate new prescriptions.

"There are a lot of steps involved in verifying a valid prescription and insurance information, which is part of what is required to accept new [prescription] customers online," said Tim McCauley, Walgreen's IT manager.

"There's no question that it would have been much easier

if we didn't have to integrate our existing back-end systems, but you really need to be combined to be of value to the customer," he said.

McCauley added that the integration effort, which involves tying legacy systems to Java-based Web application server software from Bostonbased Art Technology Group Inc. has been under way for about a year.

Other drugstore ventures have been launched online as Walgreen's pushed ahead with

back-end integration. But analysts said that doesn't necessarily mean that Walgreen's is late to the online party — at least for a conventional retailer now spreading its wings to the Internet.

"It's hard to say they're late because I don't think very many brick-and-mortar retailers have figured out the right level of integration for their customers," said Vernoo Keenan, an Internet analyst at Keenan Vision Inc. in San Francisco. ◗

CVS Corp. Woonsocket, R.I.	4,100 stores	Bought Internet pharmacy Soma.com in May
Rite Aid Corp. Camp Hill, Pa.	3,900 stores	Partnership with Internet pharmacy Drugstore.com
Walgreen Co. Deerfield, Ill.	2,770 stores	Existing customers can order refills online; new Web site will allow online ordering with in-store and same-day pickup

Survey Shows Corporate Use of Linux Nears 13%

By DAVID ORENSTEIN

Corporate IT adoption of Linux is growing fast, but the free Unix variant still plays a much smaller role than the ones trusted to commercial operating systems, an analyst firm reported last week.

Linux is or will be deployed by the end of the year in 13.5% of the 788 North American corporations surveyed by International Data Corp. in Framingham, Mass. The survey, conducted at the end of 1998, found that Linux use has grown from statistical insignificance in 1997.

"Linux is still small, but its growth is amazing," said IDC analyst Dan Kusnetzky. Linux installations trailed those of other operating systems such

as Windows 3.1, 95, 98 (89.9%), NT (81.5%), NetWare (49.1%) and Unix (45.7%).

While corporate IT is warming up to Linux — mostly because of media attention and high-profile announcements of support by major vendors such as IBM and Hewlett-Packard Co. — the operating system is not as critical to information technology operations as others are, Kusnetzky said.

Rather than functioning as a general-purpose computing platform, Linux often runs one application such as a Web server. A report last month from the Gartner Group Inc.'s Dataquest arm also concluded that Linux will be most widely used in a singular "appliance" role [Technology, July 26]. ◗

WingspanBank.com Counts on Simplicity

Study shows banks lose users otherwise

By THOMAS HOFFMAN

Keep it simple, stupid.

That's more or less the mantra that Bank One Corp.'s Internet bank, Wingspan-Bank.com, has been going by at WingspanBank.com, which was launched June 24, is trying to differentiate itself from other online banks by keeping site navigation very basic "instead of presenting every possible link a consumer might want on [our] home page," said Chip

Weldon, vice president in charge of content and design at the Wilmington, Del. outfit.

Perhaps WingspanBank.com is on to something. A survey of 2,000 U.S. adults released last week found that more than half the people who stopped doing online banking within the past year did so because they found the service too complicated or they were unhappy with the quality of customer service.

The study, conducted by New York-based Cyber Dialogue Inc., also found that although online banking has swelled to 6 million customers over the past year, another 3

million people have yet to discontinue their service during that period.

Although Bank One will continue to maintain its own site to provide services to its existing customers, it decided to create Wingspan as a separate unit to attract "millions" of new customers who don't need a brand name to bank online, Weldon said.

One of the differentiators of the Wingspan site visitors can fill a "shopping cart" similar to those used on Amazon.com's site and check off bank products about which they would like to receive more informa-

tion, Weldon said.

To build the Wingspan site, Bank One chose five senior executives from the firm's First USA credit-card subsidiary. The thinking was that First USA has maintained a "start-up mentality" as it has grown from about $4 billion in receivables in 1993 to more than $70 billion, said William Wallace, WingspanBank.com's CIO.

Wingspan's executives selected its vendor partners within a matter of weeks, unlike other banks that are mired in overanalyzing which vendors to work with, Wallace said. "We wanted to work with [vendors] who work at Internet speed and whose technologies are enabling," he said.

Though Wingspan execu-

tives declined to quantify its investment to date, a company spokesman said the unit expects to add up to $100 million to Bank One's expenses this year.

Bill Bradway, an analyst at Meridien Research Inc. in Newton, Mass., pointed to American Express Co. as another big institution that recently moved quickly to launch an Internet bank (www.home.americanexpress.com/banking).

Wingspan has already lured "thousands" of customers in less than two months, "and its outlook is good," said Joan T. Goodman, an analyst at the Pershing division of Donaldson, Lufkin & Jenrette Inc. in Chicago. ◗

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Database to Aid Kosovo

U.S. scans phone books to reproduce destroyed data

BY KATHLEEN OHLSON

ECHNOLOGY and telephone books may play a key role in helping ethnic Albanians rebuild their lives in Kosovo after Serbian forces destroyed property, personal papers and public records there earlier this year.

Volunteers from libraries across the U.S. are collecting phone books and scanning them to create a database with the names and addresses of Kosovars before the war.

That should help restore administrative records and settle legal disputes over property or inheritance claims, as well as assist in creating voting lists for elections next year, said Andras Riedl-

A MAN SURVEYS damage in Kosovo. A U.S. group is creating a database with names and addresses of Kosovars before the war.

mayer, bibliographer at Harvard University's Fine Arts Library.

Riedlmayer is overseeing the collection of books and the creation of the database, which will be put onto CD-

ROM for organizations to use.

A group of U.S. librarians originally conceived the project for demographic purposes in the former Yugoslavia, he said. The last census, in 1991, was canceled because the Serbian broke out, so they intended to help with the 2001 census. The librarians decided to expand the project when initial reports from Kosovo said ethnic Albanians were being expelled and their identification papers confiscated and destroyed, Riedlmayer said. Public records, such as birth, marriage and prop-

erty certificates, were also burned.

Phone books in Albanian and Serbo-Croatian, the two main languages spoken in Kosovo, have been found dating as far back as 1968. The information may be outdated, but the books contain names and addresses of ethnic Albanians for the past 15 years, Riedlmayer said. "If the records show where the person lived for the past 15 years or so, it strengthens their claims they own a place," he said.

Norman Ross Publishing Inc., a New York-based microfilm company, donated its services and is handling most of the data processing, Riedlmayer said.

To create the database, books are photographed, placed on microfilm and then scanned from an image into text, said Lee Mandell, a computer support specialist at Harvard University's art museums. Information will later be parsed in the database, with volunteers interpreting the correct fields of names, addresses and phone numbers, Mandell said.

Approximately 60 directories have been filmed or are being filmed, but the project is awaiting funding from various government agencies, Riedlmayer said. Volunteers hope to complete the project by the end of this year. ▶

Tools Donated to Fight War Crimes

$3.5M in hardware, software to help prosecution efforts

BY STEWART DECK

The United Nations War Crimes Tribunal has received a donation of approximately $3.5 million worth of hardware and software to help speed the collection and analysis of war crimes evidence.

"This donation changes the face of how war crimes prosecution will take place in the future," said Pierre Prosper, special counsel to the Ambassador at Large for War Crimes Issues, in a press conference at the Suffolk County district attorney's office in Boston last week.

The new equipment will help the tribunal's war crimes investigators share investigative data through a 128-bit encrypted wide-area network that will link offices in Rwanda, The Hague, the former Yugoslavia and U.N. headquarters in New York.

The current network consists of three elderly servers and software developed in-house. Investigators use it to compile all types of data, including crime-scene evidence reports, victim statements and criminal photos.

With the amount of data the current system holds, it can take as long as 15

minutes to log on to the system and three to five minutes per inquiry, said Michael Johnson, director of the Criminal Resource Center, a Concord, N.H.-based nonprofit corporation that helps provide equipment for the tribunal prosecutors.

"This is very difficult work, so it is heartening to know that people are willing to assist our efforts," said Graham Blewitt, deputy prosecutor to the International Criminal Tribunal for the former Yugoslavia.

When the system is in place in the late fall, it will allow tribunal officials to communicate quickly and securely instead of flying prosecutors and investigators back and forth between sites for private communication, Blewitt added.

The new system hardware includes two IBM AS/400 servers, an IBM Netfinity server and 30 IBM Network Station thin-client terminals.

Digital Descriptor Systems Inc. in Langhorne, Pa., is providing crime scene software that will let investigators diagram crime scenes, and Orlando-based HTE Inc. will provide another software package with applications for investigation management, statistical reporting, prosecutors, court systems and jail systems.

Electronic document imaging capabilities are being provided by Irvine, Calif.-based Formation MG. ▶

Net Partnerships Key to HP Momentum

Company announces better-than-expected performance, moves to form alliances

By JAIKUMAR VIJAYAN

STRONG quarterly sales powered Hewlett-Packard Co.'s better-than-expected performance last quarter.

But a lot of the momentum going forward will depend on how well the company executes on the series of Internet partnerships it has entered into during the past several months.

HP last week announced a profit of $853 million on revenue of $12.2 billion for the quarter that ended July 31. The numbers reflect a 37% increase from the profits of $625 million in the same quarter last year and an 11% boost from its $11 billion revenue of a year ago in the same quarter.

Much of the growth came from strong demand for the company's commercial PC and high-end Unix server lines —

including its N-Class HP 9000 servers launched in April — and double-digit growth in HP's printing and imaging business.

The performance suggests that HP's efforts to unite its various computer divisions under an Internet umbrella may finally be giving the company a more focused message, said Jonathan Eunice, an analyst at Illuminata Inc., a consultancy in Nashua, N.H.

"It gives users a reason to move forward with the company," as they implement e-commerce applications, Eunice said.

HP may also be benefiting from beleaguered rival Compaq Computer Corp.'s woes, said Laurie McCabe, an analyst at Summit Strategies Inc. in Boston (see story, page 8).

"Compaq's problems play to HP's advantage," McCabe said.

"While Compaq is sitting there trying to rationalize operating systems and product lines, HP can go [into customer sites] and say, 'Your story makes more sense.'"

Ambitious Plans

To capitalize on its recent momentum, though, HP will need to execute well on its ambitious plans — particularly where partnerships are concerned.

Just last week for instance, HP added one more company — Oracle Corp. — to a rapidly growing roster of Internet partners that includes software vendors, channel partners, Internet service providers and application hosting companies. Under the partnership, the companies will work on integrating Oracle8i and related Internet products with HP technologies like its E-speak brokering software.

The alliances are aimed at

quickly giving HP Web application software, middleware and service capabilities it lacks on its own, while at the same time increasing the market for its hardware products. Alliances with companies like B.E.A. Inc. in Pittsburgh give HP quick access to crucial middleware technology for Web environments.

At the same time, the company is hoping to push more hardware through Internet service providers and application hosting services through various partnerships and innovative financing schemes [Page 1, Aug 16].

"The real challenge for HP is to make these things work at the field level," Eunice said.

"We think they need to show some kind of positive results from these partnerships in about six months time," McCabe added.

Dell's Direct Juggernaut Helps It to Record Quarter

Compaq losing to Dell on some business accounts

By MATT HAMBLEN

Analysts believe Dell Computer Corp.'s direct distribution juggernaut helped boost the company's fiscal second-quarter earnings to record levels, above their projections.

The Round Rock, Texas, company last week reported profits of $507 million for the quarter that ended July 30, a 47% increase over the $346 million of the same quarter a year earlier.

Dell officials also boasted that their company has not changed Compaq Computer Corp. in PCs shipped in the

U.S. for the period, but an analyst at International Data Corp. in Framingham, Mass., said Compaq is still leading "by a nose" for that distinction.

Dell's hegemony has come partly at the expense of Compaq in Houston and several smaller PC makers. Compaq has posted two disappointing quarters and recently announced up to 8,000 layoffs. And it clearly has been a target of Dell marketing teams, analysts and users said.

"Dell is absolutely carving a wide swath through Compaq business accounts," said analyst Rob Enderle at Giga Information Group Inc. in Santa Clara, Calif.

Last week, Toyota Motor Sales USA Inc. in Torrance, Calif., announced that it has signed a three-year contract for 2,500 Dell desktops, some servers and storage products for an undisclosed sum. A week earlier, Amazon.com Inc. in Seattle said it would be using an undisclosed number of Dell OptiPlex desktops, picking Dell over Compaq in bidding.

Officials at Digex, a $12 million Internet service provider in Belts-

ville, Md., said at a Compaq server announcement this week that it plans to buy dozens of the new Compaq eight-way servers (see related story, page 8).

But the company might also purchase Dell servers, given Dell's direct model and stunning financial performance in the most recent quarter, according to Bobby Patrick, vice president of strategy at Digex.

"Dell's quarter definitely caught our attention, and if Dell continues moving into the enterprise space, we'll see what's best for our customers," Patrick said. Digex is already testing Dell Windows NT servers.

Analysts said the direct model Dell uses keeps expenses down because Dell carries only six days of inventory, compared with nearly five weeks for Compaq.

Operating expenses account for 23% of sales at Compaq, double the percentage for Dell, analysts said.

A Good Year So Far
Dell's revenue jumped 42% the last year during the same period!

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HP Heads Up

Hewlett-Packard's performance for the nine months ended July 31

	1999	1998
Revenue	$34.69	$30.20
Net Income	$2.26	$2.70

SOURCE: HEWLETT-PACKARD CO. PALO ALTO, CALIF.

"The real challenge for HP is to make these things work in the field level," Eunice said.

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Compaq losing to Dell on some business accounts

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A Good Year So Far

Dell's revenue jumped 42% over last quarter during the same period.

	LAST YEAR	THIS YEAR
Revenue	$5.28	$5.71
Net Income	$650M	$941M

* Figures appear in the last quarter.

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MARK HALL

The Linux game

MIKE PRINCE has an excellent batting average when choosing emerging technologies. As CIO at Burlington Coat Factory, a $2 billion retail outlet, Prince has jumped onto new platforms as expertly as Sammy Sosa whacks fastballs. And he's not afraid to go public with his risky adoption of leading-edge technology.

Back in the 1980s Sun Microsystems liked to put Prince on the dais to tout the virtues of Unix when everyone else thought it was just an operating system for techies. He later embraced Java as the foundation for new applications and was an early advocate of its potential.

Now he has discovered Linux and is broadcasting its virtues ["Burlington Coat Factory Finds That Linux Runs Smoothly, Despite Lack of Support", News, Aug. 9]. He thinks he's hit another home run with the popular open-source operating system.

But be wary of getting caught up in the Linux hype machine. Like any promising farm league rookie, Linux needs seasoning before making it in the big leagues.

A recent study by International Data Corp. has discovered that Linux servers have gone from near zero to 13% market share in two years. All the major system vendors have become big fans of Linux, adding it to their product service offerings, porting it to their various processors and even selling it directly to their customers. Some companies, such as SGI, have even made it a core part of their business. And Intel sees it as strategic platform for its current crop of Pentium chips and its upcoming IA-64 processors.

Most CIOs are acquainted with open-source technology. Products such as Perl, Tcl, Sendmail and Apache have crept inside most large organizations in the 1990s, often surreptitiously, much like PCs did in the 1980s. But it's Linux that gets the most attention because, as an operating system on par with Windows NT and Unix, it's the most visible and potentially the most disruptive to a company.

CIOs who don't plan on how to manage the Linux intrusion may find themselves playing catch-up, as many are now doing with the Web. ▶

"I UNDERSTAND THAT IT'S A 'WEB CAR', SIR. BUT I DON'T BELIEVE DRIVING 81 MILES PER HOUR MAKES YOUR E-MAIL DOWNLOAD FASTER."

ALLAN E. ALTER

With knowledge management, modesty's best

SIGH. I used to have such high hopes for knowledge management. Now I hope that someone will just put the dithering thing out of its misery and allow the rest of us to move on.

I think we saw some of that going on in our Aug. 9 issue. In a guest column that week ["Who's in Charge of Knowledge Management?" page 33], author Jim Botkin acknowledged the poor success rate of knowledge management projects. And in a separate story ["Please Don't Call It Knowledge Management!" page 50], knowledge management pioneers like GM's Vincent Barabba told *Computerworld* that they've sworn off this headswiller of a concept.

I suspect knowledge management as a Big Concept will wither soon. As the surveys by consulting firm Bain & Co. show each year, top executives are seeing less value from knowledge management than other management trends.

Another reason: The consultancies, which need Big Ideas to make Big Money, are already chasing other Big Concepts like e-commerce and customer relationship management. The diversion will cut off the flow of oxygen — I mean money — to knowledge management.

Finally, there's this: In the IT world, ideas die or slack off for three reasons. They fail too often (reengineering), implementation becomes a huge nuisance (think "push" or CASE), or they play away from lack of interest. Knowledge management is managing to do all three at the same time.

But though knowledge management is dying, there will be a post-KM world. The new approach from these folks seems to be this: Forget about trying to draw Corporate Knowledge out of Plato's cave and manage the amorphous beastie. Instead, scale down those grand ambitions and get specific. When you think about business problems or opportunities, could we do X if we know Y? If you can come up with a specific X and a precise Y, you may just have a shot at doing something useful. Don't pretend to be managing knowledge — just try to make use of what people know. That sort of sensible attitude tells me there

ALLAN E. ALTER is *Computerworld's* columns editor and features editor, managing. Contact him at allan_alter@ computerworld.com.

will be such a thing as post-KM applications, just as artificial intelligence tools survived when AI, the Big Concept, crashed.

But let's move on from knowledge-management to opinion management. You read our columnists' opinions every week; now I'd like to read yours. How can we best use the Web to help you get the most out of our columns, editorials and letters? You've got the power: Think about how opinions help you spot new issues, debunk flawed trends and get you thinking. Then send me your requests and complaints, your favorites and your brilliant ideas. Tell us what you look forward to and what you can't stand; tell us what works for you on our Web site or other sites. Please message me at allan_alter@computerworld.com, and thanks. ▶

DAN GILLMOR

The MCI lesson: Did you back up your net today?

MCI WORLDCOM was in a world of hot water last week with some of its best customers after an outage in its frame-relay data service that disrupted thousands of businesses ["Outages Plague Iast MCI Users," Page 1, Aug. 16]. No doubt the lawyers are already gearing up for some major-league paydays, but the lessons in this mess shouldn't be lost on those of us who weren't directly affected.

Sermon: If you don't have a backup plan for your connectivity, you're risking your business.

And if you think only about price when you buy your connectivity or other data services, you're likely to pay a higher cost in the long run.

End of sermon.

The MCI outage is only the latest in a series of embarrassments in online and Internet services. The famous technical wizardry of eBay, the Web auction site, and a host of electronic-stock brokerages have

DAN GILLMOR is technology columnist at the San Jose Mercury News. Contact him at dgillmor@sjmercury.com.

been a continuing story.

Maybe this shouldn't be surprised. Maybe this is just a logical extension of the fundamental unreliability of PCs, operating systems and applications software — just one more in a predictable series of customer-service scandals perpetrated in recent years by the technology industry, which has a consistently lousy record of customer service.

Somehow, though, we're more willing to put up with crummy PCs and PC software than with on-

line services that crumble when we need them. And for good reason. Data connectivity is an utterly essential part of our businesses, and an increasingly vital part of our nonbusiness lives. So why don't we treat it that way?

Consider the Chicago Board of Trade, one of the affected MCI customers.

According to various news reports, CBOT was enraged because it had to shut down some of its operations. Amazingly, however, it appeared that CBOT didn't have a backup service to switch to instantly in the event of a long outage.

Consider as well the consumer angst when eBay and the various electronic brokerages suffered their well-chronicled crashes. We are delighted to be able to trade stocks for a fraction of what full-service brokerages charge. We revel in the millions of free listings on auction sites. And yet we complain when all those zillions of hits on the site bring down a system that clearly wasn't designed to handle it. And, of course, we utterly fail to note that there may be a connection between low prices and shoddy service.

Internet companies have been in the business of building a customer base, first and foremost, and only later — if ever — worrying about reliability. If customers, consumer and corporate, start caring as much about service as price, we'll get better reliability.

The various outages also point up one of the fundamental realities of the Net: It's a chain, and the old saw about the weakest link is more true than ever. But the Net also finds ways to route around damage, and customers of Net companies should take advantage of that. Businesses need backup plans for more than archiving data; they need backup connectivity, too. Or their contracts with providers should include stiff penalties for unreliability.

My home Internet service provider costs about $10 per month more than the typical rate. I can't remember the last outage that took longer than an hour or two to solve, and I never fail to connect when I dial in.

Does the expression "You get what you pay for" ring a bell?

READERS' LETTERS

Void copyrights of noncompliant vendors

JIM KLOSSNER's cartoon depicting an online auction for the Y2K bill in Congress [News Opinion, July 12] stimulated my thinking: Since copyright laws are for the benefit of the common welfare, and since we want to encourage companies to make software Y2K compliant before Jan. 1, 2000, let's pass a law that penalizes noncompliant vendors by voiding license restrictions and copyrights. Instantly, you give the industry a powerful incentive to fix its software, and provide users with a powerful remedy in case a vendor is unable or unwilling to make the required fixes.

Bill Patterson
Principal consultant
Stratford Technologies Inc.
patterson@computer.org

Apache runs on OS/2

IN DORTE TOFT's article about Apache [Apache Developers Form New Monitoring Group," Technology, July 12], the following state-

ment is made: "The not-for-profit foundation will monitor development of the Apache HTTP Server, which is free software that runs on Windows NT and Unix, including the Linux flavor." This statement would lend someone to believe that these are the only supported platforms for Apache. Actually, there is an OS/2 version of Apache available.

Biased reporting like this propagates the myth that OS/2 is dead. Please give all the facts about the products and platforms you are covering, and let people make their own decisions.

Phillip Rhodes
Shalotte, N.C.

IT temps are there when you need them

WE HAVE heard the theme that employers prefer to hire permanent information technology workers rather than contractors ["Contractors Need Not Apply," Business Careers, July 5] again and again for many years.

However, what does a

company do when the job is not getting done and the company expects some payback for the new system it is developing? The company usually hires contractors to fill that role.

This article is full of people saying they are hiring only permanent staff, but all of those people are still looking to fill their positions. Is it better to not get the job done and wait for a permanent person?

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EDS all over again

ROBERT L. Scheier took the words right out of my mouth with his column "Beware of Enterprise Portal Pitches" [News Opinion, July 26]. In my investigation of products of this type, the same thoughts occurred to me: Uh-oh, here we go again. Here's a super new information-delivery and -presentation mechanism, and oh, yeah, there may be some plumbing complexities behind the

scenes, but we'll take care of that. You want to see how many different data sources? Well, that may take a little longer.

Only two things have really changed significantly since the advent of EIS. Yes, Web-based front ends are indeed quicker to deploy than fat clients (but strangely enough, so are CICS green screens). And more data is now stored in relational tables, which are (technically) easier to access online than flat files or DMS databases. But presenting and making sense of data in RDBMS tables is still not "plug and play" — ask any data warehouse users.

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COMPUTERWORLD welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Allan E. Alter, columns editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701; Fax: (508) 875-8931; Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

ANDREW BORTS

Where are the programmers of the 24th century?

SPACE — where no programmers have gone. Ever. Thanks to all those sci-fi programs and movies, we have a plethora of biologists, physicists and chemists. Doctors are studying exobiology like mad. Our universities are filled with electrical and mechanical engineering wanna-bes practicing their Scottish accents. Where are the programmers? Nowhere.

When *Star Trek: The Next Generation*'s Captain Picard logs on, he just looks up into the sky and speaks. The computer seems to program itself. Hey! That means 300 years from now, I'm out of a job! That's not fair!

This is disturbing. You know that they have computers in outer space, but they seem to have only aliens working on them. Frankly, I work too darn hard at my job to be put out of work by some alien.

Do they have an H-1B visa problem in the future? "Oh yes, we're having a terrible Y3K problem, but we need to get those guys from that other planet to fix it for us cheaper." These are things you just never hear of.

They have too many superusers who do too much work on their own, and I can't trust their results.

Watching the captain's science officer "reprogram" the ship's computer in just a few moments sounds off all sorts of alarm bells in me. I know from personal experience that users make the worst programmers. I don't care how logical they are because of selective breeding, there's always flaws in how they want to accomplish their tasks. Without following any human or alien top-down methodology, they start a programming somewhere you couldn't find with a scanner. How illogical!

Just once, I'd like to hear someone hit their Starfleet emblem and shout, "Those Nausicaans need the figures from astrophysics printed out in 30 minutes, or we'll be blown up." Or how about "Without a new screen for Commander Lefty, we won't be able to maneuver out of space dock."

These may sound too emotional, but, frankly, have you listened to some of the demands of our users? No matter what, it sounds like we'll still be blasted with phasers.

So where did the programmers go? Maybe they're hidden in a little room in the center of the ship with no windows, locked to their terminals. Only authorized personnel with the highest clearance are allowed to enter. To ensure that nobody leaves the room, it's surrounded by powerful force fields. These people work 24 hours per day on all the unusual, impossible tasks. After completing their tasks, they send messages to the bridge letting the officers there know the status.

Hey — I just described how I work today. I'm gonna be sick.

I'm going to start demanding that action-adventure movies be written about us computer nuts. Our lives are far more exciting than most people's. When I complete some of my programs, I'm Luke Skywalker, holding my light saber over my head. When I figure out how to make some interface work, I'm Wile E. Coyote, super genius.

But when I arrive home late and my dinner has dried up like a raisin, my name is mud.

Because they don't have to reboot things in the future, maybe they see only AS/400s. If that's true, then the future is a bright one indeed. ▶

MARTIN BUTLER

CRM isn't a magic bullet for customer loyalty

COMPANIES HAVE a long history of throwing technologies at problems that can be solved only by changing hearts and minds. Many businesses are about to do that again with the latest hot technology: customer relationship management (CRM).

CRM is the latest in a long line of applications designed to improve business effectiveness. The basic idea is that you need to reorient your business processes around your customers. In this way, you might be able to get an integrated view of each interaction with your company and use that to your advantage.

It's a large and necessary task by any standards,

but it will by no means prove to be a sufficient mechanism for ensuring customer loyalty and retention.

There are two basic problems with this well-publicized approach. The first, and in many ways most obvious, is that many businesses are just not customer-oriented, and installing a CRM system will provide them with little advantage.

Let me give you an example. About 10 months ago, I purchased a Xerox copier-fax-printer for home use. A few months later, I gave up the ghost. Unfortunately, I had lost the receipt, and the retailer asked me to phone Xerox directly. What a prime opportunity for Xerox to learn something about me and establish some kind of relationship. Instead, all I got was a young lady named Kelly, who told me she could do nothing without proof of purchase. Opportunity knocked — but was ignored. I'm sure that Xerox business managers attend courses on CRM, but CRM won't make companies actually give a damn about their customers.

The second, and actually more threatening, issue is that the Internet is putting many suppliers side by side in cyberspace. Customers will go for the best deal, no matter how much you try to CRM your relationship with them. Large corporations may sniff the vapors of CRM opium to ease their fears, but it doesn't change the basic equation: If you don't provide the best deal, you won't get the business.

Indeed, CRM is an open invitation to blunder, as Lufthansa did recently when it thought that sending its customers a newsletter seemed like a good idea. An article contained in the newsletter explained how, through overbooking, only 2% of Lufthansa customers could expect to miss their flights.

That's on par with Lufthansa's little guide to the U.K., which explains that fish and chips and turtle soup are two favorite British dishes. Turtles aren't very common in British waters.

Perhaps the most significant factor on the Internet affecting relationships with customers is the emergence of a new breed of intermediaries. Companies such as Compare.net, Edmunds.com and Priceline.com are merrily turning the electrical goods, automobile and travel markets into commodity markets. The number of subscribers to these services is growing exponentially, and the traditional suppliers are being turned into commodity shifters that get no business if they don't offer a competitive price and service.

We can also add to this the trend toward dynamic pricing models. Pretty soon, it will no longer be "Here is my product, and it will cost X." The new model will be "Here is my product. How much will you give me for it?" Your business will then have to decide whether it wants to trade at that price. EBay and many other new auction-based Internet services are driving this model, and it will soon be commonplace.

So how is CRM going to help with all this? If CRM is simply a consolidation and reorientation of what you already do, you might simply be wasting your money. CRM has to become something totally different from what it is right now. ▶

E-Business Services *BRIEF*

Leveraging Your Legacy Systems for E-Business

With careful planning, old systems can be taught new tricks

Stephanie Moore is Director, Giga Information Group, in Cambridge, MA and one of the leading experts in Y2K remediation. We interviewed her on the issues surrounding the use of legacy systems in e-business environments.

CW: What are the primary issues related to leveraging legacy systems in the e-business world?

MOORE: Companies have spent the last several years and significant amounts of money renovating mission-critical legacy systems for Year 2000 compliance. As they finish up these projects, they realize a couple of things. One is that there is now a huge application backlog that must be dealt with, and the other is optimizing the Internet as a competitive weapon. So, to rapidly deal with the application backlog and to take advantage of the cost benefits associated with the Web, many organizations are attempting to leverage, rather than rewrite their legacy systems by extending their reach and their use. Rewriting legacy applications from scratch takes too long, costs too much, and in some cases, requires a whole new set of skills.

CW: Are some of these pre-ERP systems?

MOORE: Sure. A lot of companies are saying, "I have this old mainframe that contains years worth of critical data. Given my time constraints, how can I get this system out to the Web so that my customers can have access to it? Or how can I use it to take orders on-line, so that the customers can serve themselves? I don't want to rewrite this huge system but maybe I can extend it or reuse parts of it."

CW: What's the answer—the best reuse?

MOORE: There is a plethora of options, starting with some more tactical, browser-based, screen-scraping techniques that will enable companies to give external customers access to these legacy systems. Personally, these systems were only accessible to internal users, and generally, a select group of internal users. Now there are technologies that allow companies to take these systems and safely deliver them not only to all internal users, but to external customers as well. At a more strategic level, companies can extract and reuse important logic from their legacy systems. These extracted components can be wrapped and reused in new applications development so that this legacy functionality doesn't have to be recreated.

CW: What are some of the pitfalls that users encounter in this kind situation?

MOORE: One of the big problems with these types of scenarios is that companies will sometimes find a tool or a technology solution and look for a business problem to solve using the technology. Companies should instead be taking a business driver—cost initiatives, customer relationship management, systems consolidation—and mapping that to a technology solution.

CW: Provide an example of a business driver for legacy renewal.

MOORE: An important and common example of a legacy renewal business driver is simplifying and expediting system consolidation. Many companies find themselves with a variety of business systems gained through acquisition or merger. It is not unusual for these systems to be performing similar functions for different companies in the corporation. So, they are attempting to determine which systems perform which key business functions, which of these functions are duplicated, and which systems have the best structure for consolidation. They are then planning to extend systems to deliver all the capabilities that were previously duplicated. By analyzing and harvesting the important business logic from each, companies can more easily merge the relevant pieces of each system into one without building an entirely new system.

CW: In the course of extending their systems for Y2K, have a lot of users had the foresight to build in e-commerce-type capabilities?

MOORE: That's an excellent question. And I must say that early adopters—the Y2K folks who worked on these projects early enough—fixed their systems more strategically than the laggards. In many cases, they cleaned up their code, eliminated redundant code, developed appropriate test environments and documented their system and their efforts appropriately. Some of these used equations to meet critical system infrastructure which could be used later for such things as data warehousing or new systems development.

CW: As a result of their foresight, of their mindset, what current advantages do those companies have?

MOORE: Those companies are now in a great position to leverage their Y2K legacy renewal efforts.

They've got the base, and their code is structured and lends itself to componentization. They've got information about the code and its relationship with the data. They also have documentation. This means in some cases that they will be able to extend their legacy application fairly quickly. In other cases, they will need to perform some additional data cleanup, but for the most part, they've got a jump-start on leveraging their legacy systems. On the other hand, those companies that rewrote their legacy applications or migrated their systems without replacing the old interface logic and implement new logic.

CW: What other critical issues are there to consider?

MOORE: Skills are another big issue. Most companies have in-house IT staff with skills, such as COBOL programming capabilities, that allow them to maintain and develop their legacy assets. Many companies, however, do not yet have Internet/Web development skills, or distributed application development skills. As a result, building an e-business system from the ground up is an entirely new environment is extremely difficult because they need to either acquire these skills, or retrain their legacy programmers. This will add additional costs as well as time to any e-business development project.

CW: What does all this cost?

MOORE: It really depends on the projects, and the projects are so diverse. What I consider interesting about many of these projects—particularly the surface redesign or extract types of projects—is that they are not extremely expensive, they do not require legions of programmers and they are very quickly implemented.

CW: If you could only give one piece of advice for people who are in the position of trying to leverage their legacy systems in the e-business world, what would it be?

MOORE: Identify your business driver and your business goal. Then, map that goal to some of the technologies that are available. There are a lot of vendors out there pushing point solutions and point tools. And, many of these technologies are good. However, you need to know your requirements before you even begin to investigate whether the solutions are suitable for your organization. ■

BUSINESS

OFF-LINE PITCHES

Data mining and other tools are giving some retailers the ability to personalize marketing as much off-line as on the Web. The idea is less to find new customers than to increase sales to existing ones. ▸ **36**

INSURERS FIGHT FRAUD TOGETHER

Service companies in the insurance business are finding that cooperation on some fronts is beneficial. Several have pooled their reports to give insurers a greater ability to fight fraud; others are helping automate insurance agencies with low overhead. ▸ **39**

VOLUNTARY SPAM

Spam has become almost useless as a marketing tool, and response to banner ads is dismal. But some users are finding that commercial mailings to customers who have agreed to be spammed can generate good clickthrough. ▸ **38**

CLASS OF 1999

If the three grads we visited are any indication, employers will find imagination, drive, dedication and know-how in the new crop of IT staffers, who are getting snapped up before they're even out of school. ▸ **50**

ERP LITE

Jim Champy writes that the next generation of ERP should be "ERP lite." He says ERP mak-

JARGON JUDGE

What's the difference between CRM, ERM and PRM? Not a whole lot, rules the Jargon Judge. She suggests vendors get off the acronym bandwagon before somebody gets hurt. ▸ **48**

GOT QUESTIONS?

Career Adviser's got answers. This week, Fran Quittel answers questions on careers in IT asset management and choosing the right career path to become a CIO. ▸ **53**

QUICKSTUDY

Vendor-managed inventory has been saving grocers and manufacturers costs for years, and now other businesses are experimenting with it. What is it and how can it work for you? Business Quick-Study gives you the basics. ▸ **52**

CERTIFIED E-MAIL

Certified e-mail services from UPS and companies like Certified-mail.com could take a bite out of traditional mail and FedEx income. It's potentially a multibillion-dollar market, analysts say. But it needs supporting legislation to be viable. ▸ **36**

ers must create systems that reflect the minimal work a company needs to do as it moves through a process. ▸ **44**

READY FOR THE Y2K-WORRIED?

CUSTOMERS WILL BESIEGE your call centers and service desks with all sorts of Y2K questions and demands. How will you handle them? Employees have to know the key messages "and deliver them with confidence," says Becky Siewert (pictured), Y2K communications manager at Comerica Bank in Detroit.

46

BUSINESS

Secure E-Mail Delivery Poised To Take Off

Technology could make printed confirmations a huge potential market

BY DOMINIQUE DECKMYN

After a slow start, the secure delivery of electronic documents may be headed for a boom, particularly in the legal and brokerage fields, some analysts said.

The concept is pretty simple: Instead of sending someone a document via e-mail or a hard copy by expensive overnight delivery or courier, an end user simply sends an empty e-mail message that contains a link to a secure Web site. The sender is notified as soon as the addressee accesses the document.

United Parcel Service of

America Inc. pioneered the concept about a year ago with its UPS Document Exchange service. Last month, UPS invested $4 million in Tumbleweed Software Corp. in Redwood City, Calif. — the company that provided the technology for Document Exchange.

The Competition

Other vendors are starting to eye the same space, including PostX Corp. in Cupertino, Calif., and CertifiedMail.com Inc. in Springfield, N.J. CertifiedMail.com charges $10 per month for unlimited usage,

claiming it can offer better pricing because, unlike UPS, it has "no physical [mail delivery] model to protect." UPS charges about $1 per message.

Though more circuitous than basic e-mail, secure electronic document delivery systems are easier to set up than the alternative: secure e-mail encrypted with Secure Multipurpose Internet Mail Extensions (S/MIME), adherents claim. S/MIME still isn't widely used, and to secure communication it requires both parties to obtain digital certificates from a certification authority such as VeriSign Inc.

Jim Meadows, an attorney at Atlanta-based law firm Alston & Bird, has been using the UPS Document Exchange service since it was launched. "It's a

quarter of the price of next-day delivery," Meadows said. He said he could see the technology "replace a strong majority of overnight deliveries" in the legal profession.

According to attorney Harry Rubin, head of the Internet Group at Shaw Pittman in

Washington, the UPS service provides a good way of ensuring that a document was actually delivered, allowing it to be used in the context of virtually any contract with a courier provision. Though that hasn't yet been tested in court, Rubin said, "Legislators and, I believe, courts will be very receptive to digital delivery."

Lots of Potential

The printed trade confirmations that online brokerages send their customers represent a huge potential market.

For the past few months, Ameritrade Inc. customers have been able to receive confirmations via the PostX service. Ameritrade President Michael Anderson said less than 10% of Ameritrade customers have so far opted to receive their confirmations in this way, but he said he expects that percentage to grow.

Anderson said the technology is still a little hard to use for customers. "It's a bit of a challenge to support," he said.

According to Martin Marshall, an analyst at Zona Research Inc. in Redwood City, Calif., printed confirmations cost online brokerages $1.25 apiece. Throw in the millions of legal and medical documents that get sent each year, and you get a market that could reach "the double-digit billions," Marshall said. ◗

Opt-In Marketing Tested

E-mail services boost hits to retailers' Web sites, yield big returns

BY DOMINIQUE DECKMYN

SPAM IS NOW widely discredited as a marketing method, and disenchantment with banner ads is growing, observers said. Some electronic retailers are turning to opt-in e-mail networks, which rent lists of people willing to receive pitches by e-mail, and are finding it to be a cost-effective marketing method.

In June, Melissa Cetero, Web site coordinator at Del Laboratories Inc. in Uniondale, N.Y., bought 15,000 names from a Chicago-based opt-in e-mail network called Yesmail.com Inc. Del, maker of the Sally Hansen line of cosmetics, offered addressees a free calendar application and a chance of winning $30. The campaign boosted hits to the Sally Hansen Web site significantly, Cetero said.

A 4% click-though rate "is about the best you can get with a banner campaign," said Cetero. "You can use an e-mail campaign and get 10%, and it's actually cheaper."

According to Michele Slack,

an analyst at Jupiter Communications LLC in New York, 10% to 15% click-through rates are typical for opt-in e-mail, while banners today score approximately 0.5%. Little reliable data exists on how many of these click-throughs are converted into sales, however. Opt-in networks charge about 25 cents per address for a one-time mailing.

Although e-mail marketing companies such as San Mateo, Calif.-based Digital Impact Inc. help companies build and manage their own opt-in lists to help retain customers, com-

panies like Yesmail.com and New York-based NetCreations Inc. promise to help find new customers. They offer online retailers lists of thousands — even millions — of consumers or businesses that have specifically asked to be sent marketing information about certain product categories. For instance, NetCreations lists include consumers who have signed up for any of 3,000 categories, from "Internet clients" to "tropical fish."

Some opt-in networks, such as Chicago-based CoolSavings.com Inc. and Sal-

Francisco-based MyPoints.com Inc., offer users incentives to sign up. Several players, including NetCreations, now claim to have more than 3 million addresses. Yesmail.com claims to have 7 million.

"The problem with e-mail [opt-in] lists is that they're very consumer-oriented," said Chuck Condon, marketing manager at Officedepot.com, the e-commerce division of Office Depot Inc., which targets businesses. But early this year, Officedepot.com sent out a test marketing to small businesses registered on NetCreations. Click-through rates were well above 10%.

But Slack warns that companies should watch carefully to see exactly how opt-in networks collect addresses and make sure people on the list have really opted into it. Another key factor is the number of addresses.

"Until you have large enough size [as an opt-in network], you can't really be a player," Slack said. The advice of Keith Butler, vice president at Officedepot.com: Try many suppliers, and experiment with small but statistically significant samples. "Test, test and test," Butler said. ◗

VENDORS	DESCRIPTION
Opt-in e-mail networks	Yesmail.com, NetCreations	Encourage consumers and businesses to sign up for commercial e-mail in specific categories
Incentive-based promotion e-mail	CoolSavings, Netcentives	Offer incentives to consumers who agree to receive commercial e-mail
Customer retention and management	Digital Impact, MessageMedia	Maximize existing customer base, such as sending out customized newsletters

Stores Go One-on-One

Like e-siblings, analyze data for marketing

BY DAVID ORENSTEIN

SOME RETAILERS are shifting their marketing efforts from an "Attention shoppers!" approach to one that sounds more like "Hey, Joe! We know what shirts you like, and they're 10% off today." Using data warehouses, retailers are looking to establish relationships with individual customers, rather than launching broad promotions to many people.

The ultimate goal that retailers are approaching in their stores is the one-to-one personalization that's already achievable on the Web, said analyst Donald Bellomy at Aberdeen Group Inc. in Boston.

Quality Stores Inc., a Muskegon, Mich., chain of 350 farm and garden stores, was able to increase the average spending of respondents to an experimental Mother's Day promotion by 47.4%, said sales director Helm Kraus. The store sent out custom newsletters that offered discounts on certain items — like benches — that Kraus' team thought would complement items each customer had bought in the past — like garden supplies.

The company has only begun to mine its 10-year, 200,000-customer purchasing data in a Retail Target Marketing Systems Inc. Archer database. The database can help manage campaigns and includes reports down to the individual transaction level. But like most retailers, the company had devoted its energies to finding new customers, not increasing sales to existing ones, Kraus said.

Because the cost of acquiring a new customer is about 10 times the cost of catering to an existing one, retailers can win big by focusing on their star shoppers, Bellomy said.

Smart and Final Inc., a $1.6 billion wholesale grocery chain based in City of Commerce, Calif., is testing the idea of offering specialized pricing to its 1.5 million card-holding customers. The company

JUST FOR FEET'S David Meany wants consumers to feel unique

would offer caterers a discount on napkins or janitors a discount on floor wax, said store systems director Bob Graham. The system will be built on top of a database and checkout systems provided by NCR Corp.

Just For Feet, a $775 million sneaker retailer based in Birmingham, Ala., is also jumping

into the game. CIO David Meany said the company plans to buy detailed demographic data about its customers so that it can match product data and customer purchasing histories with vital sneaker-related statistics such as whether households have kids who play sports.

The data from Integrated Marketing Solutions Inc. in Nashville and the German targeted marketing software from London-based ICL will power targeted mailings from a 2.5T-byte warehouse that will offer consumers deals on products they might want and "make them feel like they are unique when they come into the store," Meany said.

To Graham, fine-grained marketing is the way of the future: "The companies that don't embrace the new way of thinking will be in trouble. There is only so much market share out there." ◗

Insurance Agents Tap Tools To Nab Crooks

Software used to ID fraudulent claims

BY THOMAS HOFFMAN

Thomas Mulvey smelled a rat.

Six months ago, the claims investigator at Prudential Insurance Company of America noticed that an insurance customer had recently filed 16 automobile accident injury claims with the Newark, N.J.-based insurance giant. Using an automated software tool to access a giant industry claims database maintained by Insurance Services Office Inc. (ISO) in New York, Mulvey was able to find another 72 claims tied to that person across 19 other insurance carriers.

The search — using a fraud-detection tool called NetMap for Claims that Prudential has been testing — took 15 minutes to analyze and cross-reference more than 135 million claims in the ISO database.

Without the software tool, Mulvey said, Prudential would have had to assign two investigators to manually pour through stacks of claims records for a week to try to find a match.

Using NetMap and the ISO database, "we wind up with a tremendous increase in efficiency and let the computer find every needle that's in the haystack," said Mulvey. Prudential's national director of special investigative units.

Mulvey declined to provide details on the case, which is still in litigation.

Insurance fraud costs property/casualty insurers up to $20 billion each year, according to ISO. To help fight fraud, ISO consolidated its claims database with New York-based American Insurance Services Group and Palos Hills, Ill.-based National Insurance Crime Bureau (NICB), to create a massive database of property, liability and motor vehicle claims.

Nearly all insurers have access to the ISO database, but its integration with the NetMap search tool is new.

Because insurance companies were filing the same claims data to both ISO and NICB, merging the databases' redundancy and made the resulting database more complete, according to Jody Johnson, an analyst at Meta Group Inc. in Stamford, Conn.

Perhaps the clearest example of another industry in which competitors share information to reduce risk is the banking industry, where fierce competitors share credit histories when people apply for loans or mortgages, said Octavio Marcucci, research director at Meridien Research Inc. in Newton, Mass.

Westerville, Ohio-based Alta Analytics Inc., which markets NetMap, has been testing the integrated systems with Prudential and insurers such as

MULVEY: Found needle in haystack

CNA Insurance Cos. in Chicago, Progressive Corp. in Cleveland and The Travelers Group in New York.

Prudential's return on its $300,000 to $500,000 investment isn't clear yet, but the system practically cuts the time it takes to do investigations, Mulvey said.

The ISO estimates that by using NetMap against its claims database, early users have been able to obtain an 80 to 1 return on investment. ◗

Small Insurers Opting To Outsource

For thousands of independent insurance agents who run lean offices, keeping an IT professional around to support their core management systems is a luxury they can't afford.

To solve that problem, some agents are beginning to outsource management of these systems to AgencyWorks, a Salt Lake City-based outfit that agents can access via the Internet.

AgencyWorks hosts a case management system called AgencyWorks! that insurance brokers and agents can access via the Internet using a software package called Broker Base, which runs on thin client machines. By outsourcing system management and case data, insurance agents can focus on their customers and not

have to worry about housing and maintaining bulky servers and storage devices in their offices.

One life insurance broker, The Brothers Source Ltd. in Pittsburgh, has been beta-testing the system since early July. The company expects to reduce its cycle time in underwriting insurance policies by using the Internet to communicate with insurance agents they represent during the underwriting process.

"We get paid faster by getting [policies written] faster, and agents are happier because their clients have faith in what they promised," said Lisa Jellick, a marketing coordinator at The Brothers Source, which works with about 30 insurance companies such as Zurich-American Insurance Co. in

JELLICK: Expects happier clients

Schaumburg, Ill.

Meanwhile, the seven-person company has been able to free itself of maintaining case management data. "We're a small brokerage, and we don't have the staff to manage the data. With the hardware we're getting rid of, heck, we ought be able to fit in another person here," Jellick said.

Customers who use AgencyWorks' AgencyWorks! Agency Integrator system are billed $1,300 per user seat per year. AgencyWorks' competitors include PDQ.com Inc. in Lynchburg, Va., and Select-Tech in San Francisco.

— Thomas Hoffman

BUSINESSE-COMMERCE

Back-to-School.com

Need pens? Notebooks? Clothes for the kids? A few companies are going where some big retailers aren't – using the Web to take some of the late-summer stress out of back-to-school shopping

By Deborah Radcliff

A S GENE SCHULIS and his wife were shopping for their son's school supplies in the summer of 1998, a little girl staged a hissy fit right in front of them. Her mom couldn't find the purple folder the girl wanted.

The Schulises figured there had to be a better way. "We decided that we could talk to teachers and get a list of what they want for the first day of school, then provide an order blank for parents so they don't have to go shopping," he says.

And so, the Milwaukee-based School-Pak was born. But business really took off after the Schulises started merchandising on the Web. School-Pak (www.schoolpak.com) has enjoyed more than fourfold growth in four years, serving more than 250 schools in Wisconsin, Maryland, Oregon and Texas, Schulis says.

To the management of analysts, many large merchandisers including Wal-Mart Stores Inc. and Kmart Corp. are missing this seasonal opportunity. No back-to-school promotions or school supplies icons grace their Web pages. And word

searches on "school supplies" or "back to school" turn up nary a pen nor pad of paper.

"We don't have anything earmarked for back to school," a Kmart spokesman acknowledges. "But we're hoping to catch seasonal sales next year."

No projections are available for online sales of back-to-school supplies, per se. But Forrester Research Inc. in Cambridge, Mass., projects that next year, online consumers will spend $2.84 billion on apparel, $4.65 billion on media (software, books, music and videos) and just less than $1 billion on consumer electronics.

But although general retailers may be missing this market, specialized retailers are beginning to dive in.

Web-savvy kids' clothing stores like New York-based Delia's (www.delias.com) and Dodgeville, Wis.-based Lands' End Inc. (www.landsend.com) are pushing back-to-school clothing on their Web sites. And office-supply stores such as Shaker Heights, Ohio-based OfficeMax Inc. (www.officemax.com) and Staples Inc. (www.staples.com) in Framingham, Mass., are peddling classroom supplies on their sites.

Delia's is artfully cross-merchandising among its preteen and teen girls catalog, Web site and new retail outlets on the East Coast. The cover of Delia's July back-to-school catalog encourages girls to shop online by offering free mouse pads with Web orders and also references its Web site and other cool Internet hangouts on nearly every page.

"There are some sites doing really good with the kid set," especially Delia's site, says Scott Silverman, director of Internet retailing at the National Retail Federation in Washington. "They're good examples of retailers taking advantage of a multichannel strategy and making sure those channels are well integrated."

Fun promotionals are starting to pop up. OfficeMax is running a Volkswagen Beetle giveaway sweepstakes on its site to lure different demographic segments — namely parents and high schoolers.

Fun merchandising gimmicks, Web events and promotions are especially appealing to the younger set, says Theo Gering, an independent business developer in Amsterdam.

"Merchants can even chat to

get mind share," Gering says. "Just hire a few dozen stooges to hang out at major chat sites under various identities and gush over [their] back-to-school products."

Ryan Vero, vice president of e-commerce at OfficeMax, says his company anticipates a 500% increase in Web-based, school-supply shopping this year. But it took work to attract that market share, because back-to-school shoppers — parents and kids — don't fit OfficeMax's traditional businessperson demographic, he says.

After studying the needs of parents and kids, OfficeMax's e-commerce team laid out its school-supply Web pages much like it would merchandise in a store. Parents, Vero says, need to find things quickly and need help making buying decisions. So, the site's back-to-school section was designed accordingly.

Secondary marketing channels such as online communities and portals like Yahoo Inc. in Santa Clara, Calif., are also drawing parents to online back-to-school campaigns.

Last week, OfficeMax, Delia's, J. C. Penney Co. and other retailers linked their school promotions to Schoolpop Inc.'s online mall (www.schoolpop. com), a virtual school fundraiser in Menlo Park, Calif. Schoolpop offers shoppers, mostly parents of school-age kids, the chance to divert rebates of up to 15% to the school of the shopper's choice.

But Mike Weller, vice president of e-commerce at Schoolpop, says the company might be missing an opportunity. He says that, aside from promotional material its retailers might submit, Schoolpop isn't putting extra effort into the August and September back-to-school rush. The reason: Schoolpop spends its entire summer ramping up for a much more lucrative season — Christmas — which really gets under way at the end of September, Weller says.

"Back-to-school is really a short-lived market," he says. "We've seen statistics that show flat buying from [March through October]."

Gering begs to differ. "Brands on kids' lips can be a big Web winner," he says. ▶

Radcliff is a freelance writer in Northern California.

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JIM CHAMPY

It's time for 'ERP lite'

ONCE AGAIN, we face an opportunity for IT to simplify work and help companies focus people's efforts where they really count. We'll soon see whether the ERP industry has the sense to pursue this opportunity and whether managers have the appetite to eliminate the complexity in their businesses and some of the useless tasks they perform.

The last round of enterprise resource planning (ERP) systems offered hope for improving work efficiencies. In theory, companies would adapt to the more streamlined processes inherent in those large systems. And many companies did. But the extraordinary customization choices that ERP systems offered gave many more managers a way to avoid making hard decisions about eliminating useless work. More customization than standardization won out.

Now, many of the large ERP software providers are teaming up with IT services and communications companies to offer their systems on a dial-in remote basis and no-"rental" terms. It's sort of a throwback to the service bureau business of 20 years ago.

But many of those service providers are just moving their applications from one technology platform to another and offering different financial terms. They're ignoring the real challenge once again: getting companies to radically alter their processes. Real efficiency improvements will happen only when that occurs. IT alone, without our process change, doesn't add much value.

The past 10 years have been a struggle to get companies to change how they do work. The pressures of e-commerce and digital markets are creating an even bigger need for business and process change. But here's what it will take from service providers and their client companies to really affect how their business gets done: ERP service

providers have to create systems that reflect the minimal work a company needs to do as it moves through a process. Applications, processing and telecommunications services must be packaged and offered at a very low price to help get the laws of economics to kick in. Think of it as a form of "ERP lite" — and build it for big companies.

Creating "lite" systems may seem counterintuitive. Historically, software companies have

operated under the assumption that the more options they offered, the better their product would be. Please reverse that thinking. The world needs only one (simple) payroll system.

On the client side, many managers are proud that they can deal with the complexity of their business and want to preserve it. They wear complexity as a badge of courage. They also believe a lot of their work processes are unique. I once had a client who reveled in being able to maintain 75,000 different SKUs, when all its customers needed was a third of that number.

Managers must also take a hard look at how their work adds value to their core business. Companies still do a lot of useless work. I con-

Companies still do a lot of useless work.

tinue to be struck by the number of companies that set up appalling approval processes for purchasing a $2,000 PC, while paying little attention to the million-dollar deals that their sales forces are making or the quality of the products they're delivering.

My suggestion: Divide work into two camps. Some processes contribute to a company's distinctiveness. I call them the identity processes — like risk management in finance or what an airline does for frequent travelers. These processes deserve custom systems and heavy investment. And it's on these processes that managers should put their focus and energies.

Much of the rest of what a company does is commodity work, which deserves a commodity system. This should be the focus of ERP lite.

Once again, IT is giving us a chance to make work life more efficient and less complex. Let's see whether this time we can replace our neurosis for completeness with a passion for simplicity. ∎

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

CALMING THE
CUSTOMER

Y2K-worried
customers
will flood your
company with
all sorts of
questions
and demands.
Are your
customer
service and
help desk
staffs ready to
answer them?
By Kathleen
Melymuka

COMERICA'S BECKY DREWRY: "Employees have to know the key messages and deliver them with confidence"

BUSINESS YEAR 2000

EARLY LAST YEAR, a woman was opening a certificate of deposit account at a branch office of Comerica Bank when a comment from a bank employee stopped her cold. "I don't know that I would do that," the employee said, referring to the bank's ability to make it past the year 2000, and this bank is in trouble. We may not make it."

As luck would have it, the woman opening the account was the wife of Comerica's CIO. That day marked the beginning of the bank's efforts to educate its first line of customer service representatives on year 2000.

The need to gear up customer service is especially acute in the financial services industry. A spring Gallup Poll found that 54% of Americans plan to obtain special confirmation of their bank accounts and other financial records in preparation for Y2K, indicating a likely surge in customer service calls in the last quarter. But service industries like utilities, airlines, telephony, delivery and electronics and appliance retailers may also be hit, especially after the new year, when many expect a wave of inquiries about real or perceived Y2K problems.

Bruce Calhoon, director of the Contact Center Practice at Answerthink Consulting Group in Atlanta, outlined the problem for call centers at a recent International Quality and Productivity Center conference on Y2K customer service. A 300-seat call center may answer 15,000 calls in 24 hours at a cost of about $3 per call. That means a modest Y2K-induced increase in customer calls — say 20% from mid-November through mid-February — could generate $800,000 in additional costs. Certainly an event worth planning for.

But many companies aren't doing that. Earlier this year, the Center for Workforce Effectiveness, a management consulting firm in Northbrook, Ill., found that only one-third of major companies surveyed had customer service people on their Y2K teams. "The very people who would have to deal with these issues were not involved in solutions," says John Bremen, a principal at the center.

The financial services industry is out in front in preparing for Y2K customer service issues and can serve as a model to other industries that need to get in gear. It has approached the problem from two angles: front-line service representatives and call centers. For front-line service representatives, the goal is to have them trained to deal with customer concerns in their day-to-day jobs. Call centers, meanwhile, want to become an efficient force for reassuring nervous customers.

For call centers, the issue is how to handle or deflect the expected increase in Y2K-related calls and plan for Y2K problems that may affect the call center itself.

After the fiasco with the CIO's wife, Detroit-based Comerica Inc. realized it had to educate its staff. "Employees have to know the key messages and deliver them with confidence," says Becky Siewert, Y2K communications program manager.

Keep the key messages simple, she says. Like this: "The Y2K challenge is our top priority. The safest place for your money is in the bank. Your funds are FDIC-insured up to $100,000 per account. For more information, visit their Web site at fdic.gov."

All of Comerica's 11,000 employees have received key Y2K information on an 8- by 5-in. card, and the bank augments that through newsletters and e-mail. "Any time customers communicate with employees, we add something current and important about Y2K," Siewert says.

Comerica is stressing each employee's responsibility to get the Y2K message right, she adds. Each employee must take a 25-minute year 2000 computer-based training (CBT) course, pass a test and sign a statement saying he understands the bank's Y2K message and is accountable for what he says. Managers must report on the number of employees who have taken and passed the course and how many have attended Y2K training updates.

Finally, the bank uses some good-natured bribes to make sure employees get with the program. For example, Y2K e-mails often come with small rewards for those who open them or solve Y2K puzzles inside. Employees who are designated "Y2K champions" roam the buildings asking year 2000 questions and award $10 bills to those who give the correct answers.

The program is working. Siewert says. "We've had a 98% success rate on the CBT test, and employees are no longer getting into these hour-long conversations with people. We've provided them with the confidence to say, 'We can speculate for days, but this is what you need to know.'"

Call-Center Contingencies

At Progressive Insurance in Highland Heights, Ohio, call centers handle customer service, so information services executive Dennis Sutcliffe assembled a Y2K customer service team that includes decision-makers from every business process the call center supports.

Call center plans are intrinsically entwined with contingency plans, because many year 2000 problems will result in more calls, he says. So the team began by brainstorming about what could go wrong in each business process. Phone outages, power failures, postal delays, cash and credit processing problems stall or affect service. System failures could result in breakdowns or — more dangerously — in inaccurate customer statements, erroneous shipments, inappropriate dunning notices or supply problems.

The team estimated how each scenario would impact call volume and telephone switch capacity and set up processes to deal with the most likely and biggest-impact scenarios. For example, the team determined that it was insufficient to have only two buildings with backup generators and planned to add a third. It also decided to move the company's 24-hour claims service unit to one of the backed-up buildings, starting with the New Year's Eve shift.

The group also looked at needs for additional call center staff, rollover phone routing and increased switch capacity. It devised space plans, seating plans and even desktop configurations for moving more people into backed-up buildings. They worked with the business units to determine minimum staffing levels to deal with short-lived meltdowns, sporadic disruptions and ongoing disruptions.

The completed plans were reviewed with each process area such as claims and product development, with the business process leader heading the discussion. "The idea is to get them to think about it," Sutcliffe says. "The press has been so optimistic lately [on Y2K] that we wanted to create a bit of an edge and get [the staff] more engaged." The final stage, Sutcliffe says, involves scheduled and unscheduled readiness drills.

Deflecting Calls

At Betencria Inc. in Hull, Quebec, Maggi Williams is expecting an increase in year 2000 customer calls in December. She's director of business development at the Business Center, which provides help desk services for a half million customers of business service providers. "When Junior asks his parents if everything they've got will work [in year 2000], then they'll phone us," she says.

The tidal wave will hit in January. "If anything goes wrong with anybody's computer, they will phone us the first of January," she says. "It's a free call, so if there's no one else you can call, you'll call us. Even if things go great, people will call and say, 'Nothing happened. What do I do?'"

Because most callers will be asking questions that should be directed to hardware and software vendors, Williams plans to deflect as many questions as possible with a Web-based end-run. She has used a product called e-Service from Silknet Software Inc. in Manchester, N.H., to build a Web-enabled help desk to which about 400,000 of her customers have access.

Starting in September, a section of the Web page on Y2K will be highlighted, and users will be able to click on it for answers to frequently asked Y2K questions. An automated, voice-response phone system with the same type of information will catch customers who bypass the Web site. If all else fails, three live call center operators who will have the same information.

Having done what she can to provide access to potential Y2K-panicked customers, Williams is philosophical. "If the worst comes true, there will be no phone service," she says. "And we'll have no problems." ∎

— Kathleen Melymuka

ANNE McCRORY/JARGON JUDGE

So many acronyms, so little difference

FIRST, THERE WAS CRM. Now, there's ERM, PRM and even EBRM. Ugh. I know there are myriad reasons why such terms come to be. Technology and business need to evolve, and language must develop to define those concepts. But let's slow down and allow everybody to catch up.

That said, raise your hand: Do you know what CRM is? (Customer relationship management.) ERM? (I mean enterprise relationship management, not enterprise resource management.) PRM? (Partner relationship management.) EBRM? (Electronic-business relationship management.)

Now, if you followed this column, you know I would never condone the use of these acronyms unless or until you happen to be in a room where everyone understands them. And the terms themselves move or less make sense, so I can't ding them in that regard alone. But the systems that are labeled one or the other often overlap where functions are concerned, and I'm not convinced there's enough consistency in their naming to merit so many categories in such a specific space.

Consider customer relationship management. It arose from functions that were first found in sales force automation software, things like a database of a sales rep's conversations with a client that customer service folks, for example, could access when a client called with a question or complaint. But customer relationship management goes much further.

Picture a bank's customer service rep taking calls from clients. As the client's account balances ramp up on the screen, so do opportunities to sell him other services based on his profile, as determined by a data mining program. The rep can then try to sell the client services before the client realizes the need for them. CRM is proactive, not reactive.

Now consider the phone banks at a technical support line, where technicians are able to see not only a full record of all the problems you've called about, but also a record of what the salespeople, customer service folks and anybody else has worked on with you. While you're on the line figuring out why your server won't reboot, you want to check on the status of other equipment you ordered. "No problem," the technician says. "I can see shipment is scheduled for next Tuesday."

That transaction, actually, is what some night call enterprise relationship management because the rep went across departments and across systems to answer your question. The query went not just across front-office functions but into the back end, too — in this case, the company's order and inventory database. Yet the transaction was all to serve the customer, so it was also CRM.

Yet another variant in this sphere is on the partner and supplier side, but I'm not convinced partner relationship management deserves its own space, either. I recently received some information from a vendor staking claim to this moniker because its system was Web-based (so are many others), its products had server-based pricing (again, not alone) and it served the supplier/partner channel. Similarly, electronic-business relationship management seeks to foster relationships among electronic businesses.

Now I'm not saying all this software has no place in the world. Clearly, packages from companies like Vantive, Clarify and Onyx have customers. And other vendors, like Baan and Oracle, offer extensions that accomplish many of the same things. But let's not make things more confusing than they have to be. To me, they should all be CRM.

Does any high-tech jargon leave you steamed? Or smiling? Tell our resident *Computerworld's* former copy desk chief and now a news editor. Contact jargonjudge@ computerworld.com.

For the Bookshelf

Two new titles about career advancement and leadership

BY ALAN R. EARLS

Getting Promoted: Real Strategies for Advancing Your Career
By Harry S. Chambers
Perseus Books, Reading, Mass., 1999; 343 pages; $25, paperbound

Getting Promoted should have been titled *Stop Making Excuses.* The book squarely addresses all the things you should do and probably already know you should do to make the most of your skills and capabilities. It is well organized, readable and easy to use. It even has a self-scoring system so you can access your progress.

Getting Promoted is one of the few books available that focuses solely on making the most of your existing career opportunities (assuming you are currently employed).

Although not specifically information technology-focused, the author is clearly familiar with issues in fast-paced, technology-driven environments. Indeed, the real-world career example cited in the introduction is an IT professional. And if you find yourself feeling dead-ended or muttering any career-killing phrases like "It's not my job" or "They don't pay me enough," *Getting Promoted* will help you make a fresh start.

If the book lacks anything in terms of its stated premise, it might be that it seems to miss some of the motivational questions that make the difference. In other words, *Getting Promoted* talks about what one should do rather than discussing the why.

A smaller gripe: Some of the illustrations seem to be in draft form and don't effectively communicate the author's point.

Right From the Start: Taking Charge in a New Leadership Role
By Dan Ciampa
and Michael Watkins
Harvard Business School Press, Boston, 1999; 272 pages; $24.95, paperbound

Nothing succeeds like success. In that spirit, *Right From the Start* offers practical advice and inspiration for new managers to help them get off on the right foot and make the most of their new positions. As the authors note, taking on a new leadership position is different from any other new position in that one must begin to act and set directions even before having full understanding of the problems and perils you face. That's especially true in IT, where one must often begin to line up resources and assign tasks before requirements have been finalized.

In fact, new managers need to set the tone of their administration and begin to inspire confidence in others almost immediately in order to build loyalty so they can succeed later on. Ciampa and Watkins say most leadership jobs allow a window of only about six months to accomplish this "tone-setting" — and doubtless that period is even briefer in IT. Getting through that window without making major mistakes and without sacrificing your reputation or image takes preparation and immense self-control.

This book is especially geared toward higher-level managers, but many of the lessons will apply to anyone with management or project leadership responsibilities. For instance, the lessons on "knowing thyself" (so that you can act in a coherent and decisive way) and building credibility apply equally well whether you're responsible for two other employees implementing a new application or an entire IT department. This fascinating analysis of the process of becoming a leader is a must-read. The reward is that one presumably will have mastered the art of getting others to do what you believe needs to be done — even when you don't have the formal power to compel them to do it. ♦

Earls is a freelance writer in Franklin, Mass. He may be reached at alanearls@ norfolk-county.com.

MICHAELE TAYLOR, Arizona State Uni-

JEFF AKI..., American Univer...

Faces from the

Don't kid yourself that today's youth lack direction. They have ambition and attitude aplenty. Consider these recent grads from the class of 1999, who were scooped up by employers at lightning speed and have gotten off to an impressive start in IT By Rochelle Garner

NAME: Michaele Taylor
SCHOOL: Arizona State University, Tempe, Ariz.
DEGREE: B.S., computer systems engineering

When Michaele Taylor decides to make a life change, she really makes a change. For proof, look no further than her new career as software engineer at Inter-tel Inc, a telecommunications switch company in Chandler, Ariz. It's about as far removed from her previous job of eight years — as business manager at The Original Cookie Co. — as someone could possibly get. But the rewards promise to be a lot sweeter at Inter-tel.

"My goal was to make as much coming out of school as when I left The Original Cookie Co.," says Taylor, 32. "It wasn't difficult at all."

What took Taylor from pushing cookies to writing low-level machine code? "I always knew I would go back to school, but I was playing out the retail career as far as I could," Taylor explains. "I chose engineering, because I thought it would be challeng-

ing, and because I was interested in computers. Plus, one of my goals was to have a lot of choices. I didn't realize that the type of engineering I picked would be so perfect for that."

Taylor picked computer systems engineering, with its heavy focus on math, physics, core engineering and object-oriented programming. It's a brew that's in high demand around the Phoenix area at employers such as Intel Corp., Motorola Corp. and Inter-tel — companies with sophisticated programming needs.

Taylor honed her software skills during her four years at Arizona State University — but not just in class. She also got valuable experience working part-time to pay for her full-time studies. She worked at the Arizona Department of Transportation, where she developed a system to spot bottlenecks on the state's freeways; at Mesa Community College in Mesa, Ariz., where she was a C++ programmer; at a CompUSA store, where she taught Microsoft Excel and Access; and at her eventual, full-time employer, Inter-tel.

"I had about six companies pursue me," Taylor says. "My age is a big foot in the door with people. That, combined with my management and teaching experience, gives me credibility."

Laura Schultz, Taylor's manager at Inter-tel, says she's glad for her presence. "I feel

very fortunate that I have her reporting to me," says Schultz, who is Inter-tel's manager of computer/telephone integration technology. "I know she'll take and run with any task she's given — making sure she fully understands it, doing all the research she needs to do and finding the people she needs to talk to rather than relying on me to do it for her," Schultz says. "She's taken on more responsibility lately. She's actually running a project."

NAME: Babatunde Akinsanya
SCHOOL: George Mason University, Fairfax, Va.
DEGREE: B.S., computer science

Babatunde Akinsanya didn't see himself interested in computer science. Heck, the only reason he took a class in C++ was to get his family off his back.

"My whole family told me to try this, maybe because I was always taking things apart but couldn't get them back together," says Akinsanya, who had been a finance major before moving from Lagos, Nigeria. "So I said, I'll take a class and see if I like it. And I fell in love. Now I come home excited all the time, and they say, 'We told you so.'"

Akinsanya doesn't mind. The recent grad has found a calling that keeps him motivated. So motivated, in fact, that he's been inducted into the Golden Key National Honors Society and received

George Mason's Academic Excellence Award and the All-American Collegiate Award.

"I love the idea of designing something that people will use to make their day go better," he says. "At school, I focused on writing applications that relate to what customers want."

That was in school. But an internship at BDM International in Fairfax (now TRW Systems & Information Technology Group) showed Akinsanya that there's more to software development than just coding. At the information technology government contractor, he found himself drawn to the real-world practicality of project management.

"I didn't like project management in school, because it was all theory. But when I did my internship, everything came into play. Now I can't decide whether to focus on management or programming," he says.

Fortunately, Akinsanya has time to decide. His new bosses at Sprint Corp. will give him leeway before he decides which track to pursue. He starts his new job in data operations development in about two weeks.

"At Akinsanya works, he intends to pursue a master's degree. Why continue his schooling? For starters, it will help him stay ahead of the competition. Just as important, it will offer new avenues to explore.

"The IT field is constantly

BABATUNDE AKINSANYA, Wayne State University

BEN YOUNG, West Virginia University

Class of '99

changing, and there's so much out there I want to think about, like [artificial intelligence]. I want to be a part of it," he says.

NAME: Ben Young
SCHOOL: West Virginia University, Morgantown, W.Va.
DEGREE: M.S., computer science

Ben Young knew he wanted a career in computers. He just didn't know exactly what it should be. That's why, after graduating with a bachelor's degree in math and science from Alderson-Broaddus College in Philippi, W.Va., Young decided to go for a master's at West Virginia University. He hoped a larger school would expose him to more IT fields.

It worked — and not just because the university teaches more classes than a small, private school. It also has the Oracle Academic Initiative, thanks to alumnus Ray Lane, Oracle Corp.'s president and chief operating officer.

Young signed up for the series of classes on Oracle8. He was hooked. "That's what showed me how much I like [IT] and database design," Young says. "Most of our graduate classes were theoretical. But these grabbed me."

Young had no trouble finding a job — he was approached by 13 different companies. But the native West Virginian wanted to stay in his home state. Young's professor took extra care to introduce him to West Virginia companies,

including ManTech Advanced Systems International Inc. in Fairmont.

"Location had a lot to do with my decision, but it's a good environment for me," Young says. ManTech "has a good reputation for educating employees, it's friendly and has a noncompetitive atmosphere." Young is now staff database analyst in the contract software developer, working on a data warehousing project for the federal government.

"Ben is young, and he needs to gain experience, but he has the raw talent and the raw skills to do well in the IT community," says Young's boss, Jeff Edgell, assistant executive director. "For this company, in particular, he has the very important attributes of being a good team player, dynamic and able to change gears and focus as problems arise. That flexibility is key."

NAME: Jeff Akseizer
SCHOOL: American University, Washington
DEGREE: B.A., visual media, with a minor in computer information systems

Jeff Akseizer is a dynamo of activity and interests, making him impossible to categorize: He's an arts guy — working as director, cinematographer and editor of digital presentations at Fox, CNN, PBS and ESPN, while producing interactive CDs on cutting-edge art. No, he's a tech-head — working as

systems administrator for both Windows NT network servers and Apple Computer Inc. G3 Web servers in a variety of jobs.

In fact, the hyperkinetic, 23-year-old is both. He's also the manager of multimedia labs and digital labs at American University School of Communication (where he supervises a staff of 10 work-study students), the youngest adjunct professor ever appointed at the School of Communication and he's an adjunct professor at Gallaudet University in Washington, where he engineered, developed and is now building a multimedia facility at the renowned school for the deaf.

That's in his spare time. He also does contract work. "Lately, the National Institutes of Health wants someone who knows both multimedia and programming," Akseizer says.

"Jeff is one of those amazing people," says Denise Brinker, director of academic computing at the School of Communication and Akseizer's boss. "I saw him originally as a student always doing multimedia projects, and I'd always assumed that his niche was video. But when I interviewed him for this job, I saw he had this computer background, and that's exactly what I was looking for."

And how is Akseizer as an employee? "He's fun, and he shows a remarkable maturity for someone his age — especially in his role as supervisor.

He's totally bonded with the work-study staff, and on the other hand, he's definitely their boss."

How did Akseizer get interested in so many different areas? "I started when I was 6," he says. "My dad's a dentist who lectures all over the country about computers and dentistry, so we constantly had new technologies arriving in the house. I had an early understanding of how digital works. I've always loved computers."

If that's the case, why the degree in visual media? "I started off as a biology major, wanting to be just like dad, but I put the brakes on that after a class in cellular biology," Akseizer says. "I said, this is way too boring. I thought about computer science, but the CS program here is weird, with a lot of database management. So I went to the School of Communication, which let me create my own degree."

Now Akseizer just has to figure out what he wants to do with his life. He could teach, obviously. But he's also lured by the song of digital special effects. "I really got into the technical stuff, and I'm into multimedia. I don't know what hat to wear. I'm also thinking about starting my own multimedia institute for inner-city kids. I'm trying to decide."

Garner is a freelance writer in San Carlos, Calif.

> I didn't like project management in school, because it was all theory. But when I did my internship, everything came into play.
>
> **BABATUNDE AKINSANYA, DATA OPERATIONS DEVELOPMENT, SPRINT CORP.**

Vendor-Managed Inventory

BY JACQUELINE EMIGH

Throughout the supply chain, vendor-managed inventory (VMI) is a way to cut costs and keep inventory levels low. Its practitioners range from food manufacturers like Kraft Inc. in New York and Mott's USA in Stamford, Conn., to chain-store wizard Wal-Mart Stores Inc. in Bentonville, Ark.

VMI lets companies reduce overhead by shifting responsibility for managing and replenishing inventory to vendors.

"If you're smart enough to transfer the ownership of inventory to your vendors, your raw materials and work-in-process inventory comes off your balance sheets. Your assets go down, and you need less working capital to run your business," says Ron Baris, global leader of supply-chain management for the high-tech industry at Ernst & Young LLP.

In VMI, the vendor tracks the numbers of products shipped to distributors and retail outlets. Tracking tells the vendor whether or not the distributor needs more supplies. Products are automatically replenished when supplies run low, and goods aren't sent unless they're needed, consequently lowering inventory at the distribution center or retail store. Suppliers and buyers use written contracts to determine payment terms, frequency of replenishment and other terms of the agreement.

VMI is enabled by information technology, which often allows for a direct project payoff. The most prevalent technology in VMI is electronic data interchange (EDI), an ordering system traditionally conducted over private value-added networks. Typically, the manufacturer takes a daily review of inventory by pulling down EDI files from the distributor. The manufacturer then uses the inventory data to put together an anticipated order for the distributor. After getting an electronic acknowledgment, the manufacturer ships the order. When the

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Hard Goods Distribution Processing

ORDER PROCESS WITH VMI		
PROCESS		DAYS
● Review current inventory levels, pulling files from distributor to vendor		1 to 2
● Vendor sends EDI document working data		1
● Vendor puts together anticipated order for distributor		1 to 2
● Vendor sends advanced shipping notice to vendor via EDI		1
● Distributor verifies order, sends back-order acknowledgment via EDI		1
● Vendor picks order		2 to 3
● Vendor ships order		1
● Distributor receives product without check-in and verification		1
● Via EDI, distributor acknowledges receipt of product		1
● Vendor paid via electronic funds transfer from distributor's bank		1
TOTAL		**10 to 12**

ORDER PROCESS WITHOUT VMI		
PROCESS		DAYS
● Review current inventory levels		1 to 2
● Check system data for accuracy		1
● Review all branch inventories		1 to 2
● Put together purchase order for vendor		1 to 2
● Mail order to vendor		4
● Vendor receives order and verifies it with distributor		2 to 3
● Vendor picks order after talking with distributor		2 to 3
● Vendor ships order		1
● Distributor receives product		1
● Distributor calls vendor to discuss discrepancies		1 to 2
● Distributor writes check and mails to vendor		4
TOTAL		**20 to 28**

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product has been received, payment is made with an electronic funds transfer from the distributor's bank.

Distributors of hard goods such as auto parts and electrical supplies began experiencing the benefits of EDI-based VMI several years ago, says Scott Stratman, president of The Distribution Team, a consulting company in Colorado Springs. Stratman estimates that by lowering inventory levels and eliminating paperwork such as purchase orders and payment by check, such distributors have cut the time for order fulfillment from a range of 22 to 29 days to one of 14 to 17 days (see chart).

Many VMI implementations

use customizable software from providers like Supply Chain Solutions in Enfield, Conn., EJ Corp. in Marietta, Ga., and Mamagistics Inc. in Rockville, Md. VMI is also being integrated into larger supply-chain implementations that combine the inventory management, order fulfillment and product replenishment of VMI with collaborative sales planning and forecasting.

For the most part, manufacturers haven't integrated VMI with their internal enterprise resource planning (ERP) systems. That's mainly because vendors haven't built interfaces between the two types of systems.

"The two systems use differ-

ent data models," says Ron Giorgard, an analyst at Boston-based Advanced Manufacturing Research. Generally, ERP components haven't scaled to the item location volume demanded in a manufacturer-to-retailer environment. So unless you're willing to take on the burden of systems integration, you are faced with a sneaker net, Giorgard says. Item location volumes are computed by multiplying the number of units of an item by the numbers of locations where it's sold.

Though automated today, VMI was once strictly manual. For several decades, route salesmen for food manufacturers have taken inventory when

they visit stores to stock the grocery shelves, says Tim Van Mieghem, president of The Proaction Group, a consultancy in Chicago.

Makers of hospital supplies became similarly inspired, employing in-hospital attendants to count and replenish items.

Department stores like Wal-Mart moved to automated VMI in the late 1980s. One of the driving factors was the difficult task of predicting how much seasonal apparel was needed, says Bob Copeland, senior manager at Atlanta-based Kurt Salmon Associates, a consulting firm in the retail arena.

The apparel industry has continued to be a pioneer in VMI ever since. For example, Greensboro, N.C.-based VF Corp., maker of brands like Lee and Jantzen, has been implementing a sophisticated system that integrates retail inventory data from VMI into floor-space management at the store level. In a beta test, Shop-Ko Stores Inc. in Green Bay, Wis., reportedly experienced a gain of more than 20% in sales of men's jeans.

Ironically, though, industries facing complex situations have been among the last to adopt automated VMI. Supermarkets have typically taken longer than department stores, for example. The sheer numbers of items in consumers' grocery store carts have meant greater complexity in tracking and using sales data.

VMI automation is at its peak can be seen in industries like the car and paper manufacturing, which need to comply with environmental guidelines for water treatment. Manufacturers in those industries are using VMI systems to track the need to replenish water and chemicals. They do this by embedding sensors in the water treatment tanks and using satellites to monitor the tanks. ◼

Emigh is a freelance writer in Boston.

◄ Are these business terms you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@computerworld.com.

" Dear Career Adviser:

How can I make my varied work experience work for me? I have five years of IT experience. I graduated from college with a bachelor's degree in psychology, and I have a technical school diploma in mainframe computer programming. I have experience as a PC instructor, in help

desk support and as a project manager/business analyst, mainly working for Fortune 500 companies.

Currently, I'm a business analyst in our project management department, where I interface with clients and vendors while managing strategic corporate projects for our customer service division. With a combination of teaching, technical and business experience, what positions are best for me? Eventually I'd like to become a CIO, but with my background, what kind of training would I need? — CINCINNATI, OHIO

" Dear Career Adviser:

I've been in the IT area for 20 years. My work experience is very deep — from mainframes to very high knowledge of client/server systems. I'm currently a senior project manager with a lot of managerial responsibilities.

I have a bachelor of science degree in computer science

and my PMP (Project Management Professional) accreditation. I would like to move to the next level of IT, such as a director, vice president or CIO. How should I market myself? What types of agencies should I use? — 20 YEARS AND GROWING

Dear Cincinnati and Growing:

Anne Rice Banno, president of Faircastle Technology, a Connecticut-based hightech CIO search firm, says there may be valid reasons for remaining a project manager for 20 years, such as an interest in hands-on technical work, smaller projects or seeing projects through to completion one at a time. "But this is really not what CIOs are made of," she adds. Realistically, you should achieve your CIO title within the first 10 to 15 years of your work life. Or you should have made forays into the business side by running profit-and-loss

and business operations and maybe even getting an MBA.

Still, "Growing's career can advance," Banno says. "If he becomes responsible for multiple high-priority projects and shows strong management skills working with groups of 12 to 20 people.

"Alternatively, with just five years' work experience, Cincinnati, has more time to achieve CIO status and reach compensation levels ranging from a low of $200,000 to a high of between $500,000 and $700,000 or more. A good next step is a project manager," Banno says, "and gather experience in areas such as business applications development, database management, IT architectures, networks/infra-

structure, operations and ultimately international responsibility."

Management skills and an eye toward the bottom line and customer satisfaction will help you get there. Also, check out CIO magazine (www.cio.com) and Stanford, Conn.-based Gartner Group Inc.'s home page (www.gartnergroup.com) and read the article about the path from CIO to CEO in Computerworld's July 5 issue.

Dear Career Adviser:

I work as a senior IT asset management analyst for a large utility corporation. During the past two years, I've cut the cost of our IT equipment budget significantly.

I'm very interested in seeking out other companies and showing them how to do this. Is this career path viable over the longer term. If so, how do I find companies hanging on the asset management and leasing bandwagon? — IT COST CONTROL

Dear Controller:

According to Chauncey Bell, senior vice president at Business Design Associates in Alameda, Calif., PC equip-

ment loses approximately 1% of its value every week. As computers are increasingly outsourcing, insourcing, leasing and subcontracting infrastructure equipment costs, you're right to think about the business side of IT. But this career is more entrepreneurial, and your success will be measured by your ability to produce results.

Having an IT background, knowledge of asset management software packages and modules in enterprise resource planning applications plus an MBA will help you understand the value of IT assets, their capitalization and their appeal as investments. Bottom line: If you've entrepreneurial with a record of successful cost-cutting and good contacts, you can approach companies and tie your compensation to your cost cutting to produce results.

Also, check out Customer Support Management magazine's article on asset support management (www.supportmanagement.com/back/sep-oct/asset.html), www.lockmart.com, Mountain View, Calif.-based Remedy Corp.'s enterprise applications and IT Service Management modules (www.remedy.com/products/asset30.html) and Gartner Group's Software Asset Management Interest Group (http://gartner4. gartnerweb.com/sig/static/ swami/swamiframe.html). ⬥

WORKSTYLES

What It's Like to Work in IT at NASA

Interviewee: Sandra Daniels-Gibson, director of the information technology and communications division.

Organization: National Aeronautics and Space Administration (NASA).

Main location: Washington

Number of employees (total area): 1,300, all in Washington

Number of IT employees: Just over 20 permanent staff members (civil servants) and 500 contractors.

What is NASA's headquarters IT team responsible for? "We support financial and personnel systems, budgeting, the liaison to Congress and the White House, the chief en-

gineer, the chief scientist.

"We also support all external communications, like the NASA home page and our kids-only Web site. We also help out at the White House if they are having a [NASA-related] function, like an event for the nation's teachers. We created a CD-ROM for the recent Apollo 11 anniversary.

Dress code: "It ranges from business casual, and we have dress-down Fridays."

Workday: "As early as 6 a.m. to 6 p.m. and later. [Or] you can work a nine-hour day and have one day off every two weeks."

Most people carry beepers? Call

poor? 10, "because of the freshness, presentation and variety. The one thing everyone complains about: "Anything that requires the completion of work within schedule."

Where the office gossips: "The front office. There's also a whiteboard there, where people write quotes of the day."

Little perks: "When you've done a good job on a project, you can go to a brunch at the Kennedy Space Center at Cape Canaveral — the key players in our [Y2K project] are going to a launch. We also get free tickets to events at the Air and Space Museum. Also covered parking, [public transportation] fare subsidies and the alternate work schedules. We have parties a couple of times a year. And at any given time, one of the astronauts is likely to be here giving a presentation in the auditorium, and that's really nice."

Last complaint/department perk: "A loss [this month], with all the attire, food, beverages, skits and decorations of a luau. Before that, we had a real down-home barbecue, and before that, a Halloween party with full costumes."

Would employees feel comfortable e-mailing the NASA administrator, Daniel Goldin? "People do. He invites people to communicate and makes himself visible."

Quote: "We're quite busy here, because we have the customer base of making sure our users' desktop requirements are taken care of, as well as any number of special projects, like becoming ISO 9000-certified. And because we're NASA, a lot of what we do and support involves cutting-edge technologies. So we get to support a lot of things that you wouldn't in other jobs. The marvels of work keeps it interesting for us." — Leslie Goff

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TECHNOLOGY

RAYOVAC RECHARGES

When the battery maker decided on SAP's R/3, it pulled out all the stops and went for a 14-month, $14.6 million "big bang" implementation. The system's up, and the CIO calls the program a success — but managers unhappy with R/3's reporting may disagree. **56**

IT DON'T COME EASY

User companies and vendors are working on a standard to assess how easy software is to use. The goal: force vendors to make software more usable. IT shops with usability labs have been known to nix software deals when they learned the packages were kludgy. **64**

ATTACKER TRACKERS

Using an intrusion detection tool from Network ICE, one business recently got aggressive with a cracker, tracing his IP address and forcing his Internet provider to shut him down. A growing list of security products are adding this IP tracking ability. **58**

IBM LAUNCHES ROCKET CHIP

IBM gave users their first glimpse of the Power4, the processor it's developing for the AS/400 and RS/6000. The company said the chip has been cranked up to 1 GHz in lab tests. **58**

HACK OF THE MONTH

Corporate networks could be sharing their messages with snoops or losing them altogether, thanks to vendors' sloppy default configurations. IT managers have wisely been disabling a vulnerable network-discovery protocol called IRDP — not suspecting that Windows and Solaris re-enable IRDP automatically. **58**

EMERGING COMPANIES

The immersive graphics and easy interactions of virtual reality inspire near-fanatical loyalty in users. Avaterra.com believes virtual business-to-business worlds can do the same. **60**

WHAT TONE QUALITY?

When it comes to putting audio-enriched presentations on the Web, sound quality isn't as important as past getting the darn sound files into the presentation properly. And that part of the task still needs work. **66**

FLASHBACK

In 1982, TCP/IP changed the landscape and Sun started offering high-volume, low-priced, networked workstations with an open architecture. **68**

THIN SERVERS, THIN ICE?

AS IT LAUNCHES Trade.com, a global "virtual investment bank," Bluestone Capital is passing on proven Unix servers and instead deploying Windows NT on "thin servers" from a little-known company called Network Engines Inc. The big draw? Trade.com wants to take advantage of Microsoft Active Server Pages. The company is hedging its bets with Unix backup, and analysts are skeptical — but very, very curious. **58**

TECHNOLOGY**SOFTWARE**

Rayovac Charges Into SAP With a Big Bang

Company calls implementation a success, but says it now faces new challenges, like getting employees prepared to use the system

BY STACY COLLETT

When Rayovac Corp., the third largest battery manufacturer in the U.S., set a goal in 1996 to double its size by 2001, it found the printing timely, accurate information out of its older system would be the No. 1 problem.

Manufacturing, distribution and sales groups each developed their own software systems, which didn't communicate with one another, recalled John P. Ridlehoover, CIO at the Madison, Wis.-based company. Also, Rayovac's 10-year-old mainframe system, saddled with proprietary applications that didn't communicate with one another, was plagued with system failures and wasn't year 2000-compliant.

So Rayovac embarked on a 14-month, $14.6 million SAP R/3 implementation using the Accelerated SAP (ASAP) implementation method. After months of debugging and simulations, Ridlehoover flipped the switch May 3, and the installation was deemed a success. But now Rayovac has new challenges: living without its reporting capabilities and adjusting to the new system.

First, Rayovac replaced its mainframe with a client/server infrastructure that would accommodate R/3.

Once the basic SAP configuration was complete last October: Ridlehoover and his staff spent seven months on integration and simulation testing.

"We found a lot of bugs, where things had to be reconfigured," Ridlehoover said. "Orders we put into the system would not be skipped in the end." There were also errors in the master data that had to be fixed to maintain accurate inventories and produce proper results. Integration testing revealed more problems, and dozens of software patches had to be applied.

Now that R/3 is up and running, getting employees to adapt to the new process-oriented system and the lack of legacy reports is a challenge.

"SAP is very weak in producing high-level management reports. Our management finds it very frustrating," Ridlehoover said.

"The issue isn't deficiencies or problems with R/3 [reporting], but with end users who are locked in to their old-school way," said Robert Dorin, an analyst at Aberdeen Group Inc. in Boston. Managers in many companies are used to having a stack of reports on their desk, whereas SAP can give them an online query capability to provide information easily, he said.

Learning how to use the system is one of Rayovac's biggest challenges, and the company is training employees. Ridlehoover said. But he's committed to not modifying any SAP code. "I think that's the secret to the success of using vendor-provided software," he added. In a year or two, Rayovac plans to spend another $1 million on a data warehousing system with more reporting features.

Some observers say foregoing customization and forcing change is the price of doing business with ASAP, and the methodology has gotten better with time and experience.

"In the past, big-bang implementations have been widely unsuccessful because of the pain of the cutover and customization that's required. But the methodology that companies, SAP and consultants are using is much better developed now, and pitfalls are much better known," said Stephen Cole, an analyst at Forrester Research Inc. in Cambridge, Mass.

RAYOVAC CIO John P. Ridlehoover says code won't change

Aussie Rail: ERP Innocent

BY PETER YOUNG
SYDNEY, AUSTRALIA

In the U.S., people have blamed all manner of problems on Y2K [News, Aug. 9]. In Australia, enterprise resource planning (ERP) packages are the whipping boy.

Last week, the State Rail Authority of New South Wales admitted it couldn't blame $3.6 million in overpayments on its ERP software, Mincom Information Management System (MIMS), but it second-ranked the agency wished it could.

But human error was at fault, the authority acknowledged.

The excess payments occurred four times, of which two were related to "computer malfunctions," according to a press release. But the authority's chief financial officer, Rob Noyes, said he'd be hard-pressed to blame MIMS.

Young writes for Computerworld Australia.

Exchange Outsells Notes in First Half of '99

But both companies say the said may switch during second half of the year

BY SAMI LAIS

Worldwide sales of Lotus Notes lagged behind Microsoft Exchange by 673,000 individual user licenses for the first half of this year, according to a recent report from International Data Corp. in Framingham, Mass.

Ken Bisconti, Lotus Development Corp.'s Notes marketing manager, said he was unconcerned. Microsoft sales tend to rise in the first half of the year, and Lotus' rise in the second half, he said.

Doug Stumberger, an Exchange Server product manager at Microsoft Corp., agreed. "It wouldn't surprise me to see the lead switch in the second half," he said.

According to Microsoft, the report shows sales of licenses for Exchange climbed from 3.95 million in the first quarter to 4.14 million in the second.

The companies disagreed on

further interpretation. Bisconti said he expects Lotus will continue to "maintain our 8 million-to-10 million-seat edge in installed base."

Notes sales for the quarter were up 28% over the same quarter last year and growing "faster than the overall messaging marketplace," Bisconti said.

Novell Inc.'s GroupWise was a distant third, with 2.7 million sales worldwide.

74%	Browser clients
74%	Web servers
67%	In applets
51%	Applications servers
35%	Database servers
26%	Nonbrowser clients

Trade.com Bets Big On Thin-Server Strategy

Online trading company sidelines Unix in favor of Windows NT

BY STACY COLLETT

INVESTMENT BANKING and brokerage firm Bluestone Capital LLP is about to take a giant leap into the world of online trading. On Aug. 30, the New York firm expects to launch Trade.com, a global "virtual investment bank" for online equity trading as well as currencies, bonds and other securities.

Perhaps an even larger leap of faith is in the technology Bluestone has chosen to handle potentially high transaction volumes and keep the site from crashing.

Unlike ETrade.com and Charles Schwab & Co. online, which use powerful Unix servers from Sun Microsystems Inc., Trade.com is basing its site on Windows NT, which will be deployed on thin servers from a little-known company, Network Engines Inc. in Randolph, Mass.

The servers, called WebEngines, are application-specific devices that run on Pentium III processors from Intel Corp. Network Engines' product literature said each WebEngine can handle 760 million hits per day.

WebEngine servers work in a pool, or cluster, and act as one. If one server fails, the workload is redistributed to another Trade.com will start

operations with 40 servers that cost about $30,000 each and expects to have 100 servers in use by early next year.

Network Engines CEO Larry Genovesi said WebEngine servers can scale up to 256 nodes, but that such a configuration

TRADE.COM'S GURPREET "GARY" TOOR said only Windows NT can support Microsoft Active Server Pages

has never been tested. "It's impossible to penetrate that much traffic" in testing, he said.

For Bluestone, the decision to go with the NT operating

system came down to it being the best way to link its expected 25 to 30 global banking partners, each with tens of thousands of accounts, to the site. "We have to interface with every major trading system, and we're trying to take advan-

tage of Microsoft Active Server Pages," which are Web pages that can run embedded scripts on a server, said Trade.com's information systems director

Gurpreet Toor. who spent two and a half years and about $2 million setting up the site. "Only NT today can support [them]."

Bluestone Chairman Kamal Mustafa said the firm will fund its Internet traffic, starting with 10,000 to 20,000 accounts from each overseas bank "and taking them on as we can, while maintaining our support."

Bluestone isn't taking a total leap into the unknown. The company said it will use Unix servers as backup, and if the WebEngines can't handle the load, Bluestone won't hesitate to switch over. How successful Network Engines' systems are in high-availability environments remains to be seen, the company has only one customer that it characterizes as a high-availability user.

Industry watchers were intrigued but cautious. "It sounds cutting-edge, but I'd be hesitant to stick my reputation and money on the line," said Ed Kountz, an analyst at Tower-Group in Needham, Mass.

Octavio Marenzi, an analyst at Meridien Research Inc. in Newton, Mass., said there are reasons other online brokerage firms have stuck with Unix. "It's more scalable and has the [clustering and parallel processing] you need," he said. ▶

IBM Introduces Chip for AS/400, RS/6000

Processor hits 1 GHz in lab tests, targets complex applications

BY JAMES NICCOLAI

IBM last week offered the first glimpse of a new processor under development for its AS/400 and RS/6000 servers, called the Power4. A test ver-

sion of the chip has been cranked up to 1 GHz in IBM's lab tests, the company said.

The disclosure was made at the closely watched Hot Chips conference, held here at Stanford University.

Because clock speed is only one determinant of server performance, IBM has also developed a complementary technology called asynchronous wave pipeline interface, which will enable bus speeds for the

Power4 in excess of 500 MHz, said Frank Ferraiolo, a senior engineer at IBM. Bus speeds determine how fast a processor can exchange data with other parts of a system.

IBM hopes its Power4 will be used in powerful Web servers and for running e-commerce applications as well as complex technical and engineering applications used by the scientific community, said Joel Tendler, a senior technical

analyst in IBM's server group.

IBM aims to start selling the new processor in the second half of 2001 in its AS/400 and RS/6000 servers, he said.

IBM's 64-bit offering will compete with chips from Sun Microsystems Inc., Hewlett-Packard Co. and Compaq Computer Corp., all of which are refining their own 64-bit server processors. Intel Corp. is expected to enter the fray next year with its first 64-bit processor, known as Merced. ▶

Niccolai writes for the IDG News Service in San Francisco.

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MORE ONLINE
For resources related to online trading, visit our Web site.
www.computerworld.com/more

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Processor hits 1 GHz in lab tests, targets complex applications

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Niccolai writes for the IDG News Service in San Francisco.

Firm Nabs Cracker With Intrusion Detection Tool

New generation of security software traces IP address, provides legal evidence

BY ANN HARRISON

IN JANUARY, systems administrators at Rockliffe Systems Inc. in Santa Clara, Calif, discovered their mail and Web servers were under attack.

Using Black ICE, an intrusion detection system from Network ICE Corp., the company tracked the attacker's IP address, blocked his attack and forced his provider to shut him down.

That's significant: Black ICE is an example of a growing breed of security tools that can track an attacker's IP address.

"It's a new concept to hunt down these hackers and take legal action," said Dan Arndt,

Rockliffe's vice president of operations.

Rockliffe, which produces MailSite (e-mail and list server software, first noticed its Microsoft Corp. IIS server, running Windows NT 4.0 with Service Pack 3, was locking up under a TCP synflood and port scan attack. Synflood attacks bombard servers with data packets; port scans look for vulnerable ports that can serve as entry points.

Barrage During Beta

In April, the company became a beta site for San Mateo, Calif.-based Network ICE's Black ICE. Rockliffe also upgraded to Service Pack 4.

On June 22, the same invader launched a barrage of attacks: another TCP synflood and port scan; an HTTP get-data probe for open shares (which uses a known security hole to gain access to systems); and another exploit that looked for ways into the company's file system. Rockliffe was ready.

Arndt said the Black ICE tool detected the attacker's IP address within four hours, while the Black ICE Defender tool blocked further traffic from that location.

Rockliffe then contacted Globall.net, the attacker's network provider. The attacker turned out to be in Brazil and called himself "Marro Jr." Rockliffe sent Globall.net a copy of its attack logs, and the provider immediately shut down Marro Jr.'s account.

That's important because In-

> This product is giving government agencies and investigators, or even users, the ability to pinpoint [attackers] and pursue them.
>
> DAN ARNDT, VICE PRESIDENT OF OPERATIONS, ROCKLIFFE

ternet providers are gun-shy about closing accounts unless the evidence is overwhelming, Arndt said Globall.net was impressed with the level of detail in the logs.

"This product is giving government agencies and investigators, or even users, the ability to pinpoint [attackers] and pursue them," Arndt said.

It's Against the Law

Rockliffe is now exploring legal action. The information provided by Black ICE also allowed Arndt to remotely log into Marco Jr.'s Web server. He discovered the attacker was running an evaluation copy of MailSite whose free-use limit had expired. "He just wanted to hack into the system and... not spend $2,000 for the product," Arndt said.

Arndt suggested that other companies look for intrusion detection tools that reveal the attacker's IP address. "If you take an active role in tracking these people down, these hackers will realize that they are not anonymous anymore," Arndt said. "Hopefully, that will be a deterrent." ■

DEBORAH RADCLIFFE/HACK OF THE MONTH

Vendor Defaults Open Doors to Invasions

CORPORATE NETWORKS and cable modem users could be sharing their messages with snoops or losing them altogether to denial-of-service attacks, thanks to a default configuration in Windows and Solaris machines, according to an advisory posted earlier this month by L0pht Heavy Industries.

Understanding the hack requires an understanding of some terms:

■ DHCP stands for Dynamic Host Configuration Protocol, which lets you dynamically assign IP addresses.

■ ICMP stands for Internet Control Message Protocol. ICMP, in turn, is the "I" in IRDP — which stands for ICMP Router Discovery Protocol. IRDP is a simple, unprotected protocol used to discover addresses on

networks and subnets. It says, "Here I am," to which the router would respond, "Here's how you get to me,' " says John McCown, technical director of network security at the International Computer Security Association in Carlisle, Pa.

Because IRDP has long been subject to spoofing attacks, network administrators think that by disabling IRDP on their DHCP, they're protected.

They're wrong. Here's the problem: Microsoft's Windows 95, 98 and its upcoming Windows 2000, as well as some Sun Microsystems Solaris systems, re-enable this protocol even if you've turned it off.

According to a co-founder of L0pht, code-named Mudge, that vulnerability opens networks to a smorgasbord of attacks: snooping (switching traffic through a server, where unencrypted

data can be read), denial of service and man-in-the-middle (in which the attacker intercepts, or even changes, unencrypted messages). L0pht is a group of Boston-based, white-hat hackers who do security consulting.

Most IRDP spoofing threats are internal. Especially for man-in-the-middle and snooping attacks, the attacker must be inside the LAN or WAN.

But that's hardly comforting — most security threats do indeed come from the inside.

So what do you do if your organization is running DHCP on clients?

■ First, block all ICMP packet types 9 and 10.

■ Second, get a fix from Microsoft that disables router discovery at http://support.

microsoft.com/support/kb/articles/q236/1/41.asp. "The change has to be made on every machine, so unless you have a log-in script or some automated way to do this, it's a lot of work," says

Ian Poynter, president of Jerboa Inc., a consulting firm in Cambridge, Mass. (For more details, visit http://l0pht.com/advisories/rdp.txt.)

■ Finally, make sure to fix remote systems and laptops.

Poynter says it's a significant danger that network managers must hassle with yet another "misimplementation of the month," thanks to vendor carelessness. "It's bad enough the core protocols were often designed with no thought to authentication. But then we have to second-guess where they are misconfigured to," he says. ■

DEBORAH RADCLIFFE is a freelance writer in Northern California. Her Internet address is deradiff@aol.com.

Virtual World for Biz Kids

Avaterra.com brings a dose of virtual reality to the business community

BY CYNTHIA MORGAN

That dungeons-and-dragons world of virtual reality isn't exactly business as usual for corporate America. But Avaterra.com Inc. thinks it should be.

Avaterra.com, already doing well with its consumer-side virtual communities, is expanding its world of avatars, online shopping centers and live chat groups to the corporate sector.

Virtual communities may be old hat for online buffs — moviemaker George Lucas proposed one of the first online worlds, Habitat, in 1985 — but for corporate managers, the idea of a virtual business environment sounds about as far away as a Star Wars galaxy.

If you haven't encountered a virtual community before, it can be a disorienting experience. You exist in the world as an avatar, a graphical representation that can be anything from a colored square to a 3-D human (or animal) figure. Your avatar can speak to the avatars of others, gesture, move through the world and

interact with objects in that world. The analogy to real-world living can go as far as eating, drinking, driving and sleeping online. How real it actually becomes depends in part on your willingness to suspend disbelief and on the environment's usefulness.

Avatars can be customized to look more like their human counterparts. They have personal spaces, such as an office or apartment, and can fill those spaces with tools they need. A fax machine, for example, might connect to background faxing; a videotape could contain multimedia training. If successful, an avatar's personal space could become a central depot for Web browsing, meetings, file storage and knowledge management.

Because so many tasks start there, the site can become very "sticky" — that is, it can have a remarkable ability to retain visitors. Good Web sites measure stickiness in minutes; a good virtual community measures stickiness in hours.

Right now, it's tough to imagine hardened corporate

IN AVATERRA'S ONLINE WORLD, low-bandwidth virtual reality brings geographically dispersed employees together at corporate meetings

executives sitting down to a virtual inventory or accounts receivable file while enjoying a virtual cola. But it's a trend that bears watching and one that's likely to turn up in marketing conversations that involve information technology.

The virtual communities promoted by Avaterra.com and others offer many ideas that IT managers can adapt to their intranets and extranets. The graphical online worlds can give new users visual clues to procedures, operations and data. File transfers of documents, multimedia files and software can be managed in the background; the user simply grabs the object and files move, install and launch transparently.

Meetings and brainstorming sessions can be conducted entirely online, without the setup problems and resource overhead of videoconferencing. And virtual librarians could collect

recorded customer support sessions and other knowledge that might otherwise be hard to collect from the most experienced employees, indexing it alongside more traditional documentation and tutorials.

Today, corporate interest in virtual worlds is focused on selling opportunities.

Avaterra.com offers e-commerce storefronts and new distribution methods for anything that can be encoded into a computer file. It's also trading the failing Web banner ad for a new type of online advertising: brand-name product placement. Hollywood has been successful at placing soda and clothing inside movies. Avaterra.com is doing the same online. A 3-D picture of a book might open to an ad, a Web page at barnesandnoble.com that sells the book or a discussion with the author.

Avaterra.com goes a step further by encouraging community members to send free "samples" of a product to others in the community.

Graphics and dynamic Web pages are accepted part of an information package, and discussion and chat groups have accustomed users to online environments. Avaterra.com took over Fujitsu's Worlds Away service last year and, says CEO David Andrews, gathered 17 million subscribers in about three months.

Don't hold your breath for virtual corporate intranets anytime soon. Too much of this technology is still too raw for words, even virtual ones. But watch Avaterra.com and its cousins. Sooner or later we'll all be using this stuff. ❚

Speech Gadgets Mainly for Heavy-Duty Transcribers

BY HOWARD MILLMAN

THE OLYMPUS DS-150 digital voice recorder comes with 8M bytes of RAM

I F YOU SPEND at least two hours per day dictating, get ready for some good news. The handheld recorders I tested, Dragon Systems Inc.'s NaturallyMobile and Olympus America Inc.'s DS-150, worked well enough for me to invest the 10 to 20 hours it will require to train them.

In my tests, both units achieved about 95% accuracy and can continue to improve as they learn your speech patterns and vocabulary. Despite this suitable-for-real-world-use degree of accuracy — a substantial improvement from when I looked at mobile speech-recognition devices just six months ago — they aren't quite ready for widespread use. The gadgets are probably best suit-

ed for doctors, lawyers, field salespeople and researchers.

Accuracy is a result of the time and effort you spend training the software and training yourself to use the devices. "After a couple of weeks of intense training [of] the software

and yourself, these mobile devices can achieve a 98% accuracy. But they are still speaker-dependent, so don't plan on throwing away your keyboard any time soon," says Rob Enderle, vice president of desktop and mobile devices at Giga Information Group Inc. in Santa Clara, Calif.

I would recommend you allow about one hour to learn the intricacies of the hardware, two hours to train the speech-recognition software and 10 more hours to train yourself to speak clearly, add syntax commands and avoid filler pauses.

I found minor differences between the units in accuracy and ease of use. I preferred the feel of the DS-150, even though its design — a little longer and narrower than a business card — made using it more complicated than the palm-size NaturallyMobile, with its 10 single-purpose buttons. Overall, I give slightly higher marks to NaturallyMobile for its easier-to-use hardware, software and instructions. I used a Compaq Corp. AP400 with 132M bytes RAM and an Intel Corp. PII-400 CPU for my test machine. Translation required about 60 seconds per page.

Millman operates the Data System Service Company LLC, a consultancy in Croton, N.Y.

NaturallyMobile

Dragon Systems Inc.
www.dragonsys.com
$349

Dragon Systems' decade-long experience developing speech-recognition software shows clearly in this release. The software, Dragon Systems's NaturallySpeaking Preferred, installed quickly in a logical, easy-to-follow sequence. Transferring recordings from the recorder to the desktop via a custom cable and then translating them took a few seconds. To save time, you'll want to leave the special cable, which is bundled with the package, connected to an available communication port.

NaturallyMobile, like the Olympus DS-150, stores information with Microsoft Word, mostly through a cut-and-paste process or a file import. Both vendors offer software upgrades ($50 to $75) that provide enhanced integration with popular personal information and calendaring applications such as Microsoft Corp.'s Outlook; San Diego, Calif.-based Qualcomm Corp.'s Eudora; Symantec Corp.'s ACT! and Lotus Development Corp.'s Notes.

The early success I achieved with dictating to a variety of environments encouraged me to continue working with the unit. I had the highest accuracy in environments with either no noise or slowly background noise, such as on a plane or in an automobile. Recording in areas with random noise, such as a diner, reduced accuracy to 50%.

NaturallyMobile's 4M bytes of memory held 40 minutes of high-quality recording, suitable for later transcription. You can record up to 74 minutes by setting the recorder for a lower sampling rate, but this lower-quality recording isn't suitable for automatic transcription. An

additional 8M-byte memory module ($80) slips into a slot and can double recording times.

Olympus DS-150 digital voice recorder

Olympus America Inc.
www.olympus.com
$349

Travelers who prefer their technology compact will want the sleek, 2.3-oz. DS-150. However, the functions of the DS-150's buttons change depending on how long you hold them, and you often need to use them in conjunction with the menus generated by the thumbwheel. Using this is more of a challenge than NaturallyMobile, with its plainly marked controls.

On the positive side, I liked the DS-150's convenient one-button dictation option. Pressing and holding the clearly marked button automatically rewrites all other settings and puts the unit into its highest-quality recording mode needed for transcription. Matsik, N.Y.-based Olympus bundles IBM's ViaVoice transcription software with the unit.

The unit's 8M bytes of RAM provide about 80 minutes of high-quality recording and 160 minutes of extended recording. Optional memory modules aren't available.

The DS-150 offers only two folders, holding 99 messages per folder (compared with NaturallyMobile's 99 folders with 99 messages each). That could be a limitation if more than two people share the unit or if you need a more flexible file-management system.

Both the Dragon unit and the DS-150 use two readily available AAA batteries that power a unit for about nine hours. Each unit has an automatic shut-off feature.

NATURALLYMOBILE's software can be installed quickly and easily
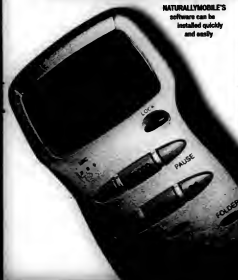
Universal Serial Bus

BY MELANIE MENAGH

UNIVERSAL Serial Bus (USB) is similar to a serial port. It's a standard that supports a port on the back of your PC, where you plug in peripherals like your mouse and keyboard. But the USB standard is faster, easier and better, says Martin Reynolds, vice president and research fellow at Dataquest in San Jose.

USB, at 12M bit/sec., is about 10 times faster than a serial port and much smaller.

"The [USB] connectors are very small, so that means that while a parallel port is fine for a printer, it won't look so good on a camera the size of a golf ball," Reynolds says.

Prices are now virtually the same as a serial or parallel port.

One of USB's strengths is that it allows you to connect to a hub. These hubs have 4- to 6-ft. cables. One end hooks into the USB port on the computer, and at the other end is the hub — a box with six or eight USB plugs to which you attach peripherals. Some monitors or flatboards have hubs right on them.

By connecting to a hub, USB allows you to add (theoretically) more than 200 peripherals to your setup. It's sort of like an extension cord with lots of outlets; although Rob Enderle, an analyst at Giga Information Group Inc. in Santa Clara, Calif., says you probably only want to plug in five per hub, or speed and performance might be compromised. "It really depends on the bandwidth required of the peripheral," he says.

Something like a video camera or a scanner should have its own port. With something like a keyboard, mouse or joystick, you probably could plug in a hundred, you just couldn't operate them all at the same time, Enderle says.

USB was designed to work with features in Windows 98 and the forthcoming Windows 2000 to recognize systems immediately; your monitor tells you what to do to get the driver you want to add. It does this without running wizards or rebooting. If you're plugging in a camera, your monitor would show the message, "Please load driver disc for your 3Com video camera."

Reynolds says he has his printer, camera, scanner, fingerprint reader (for security checks) and Zip drive all on USB. You can daisy-chain devices and it won't interrupt the system. "It's great for joysticks," Reynolds says. "Before, if you had more than one joystick, you'd have to unplug one and plug in the other. With a hub, you can have them both plugged in, and people can play together."

There are downsides to USB because it runs only on Windows 98 or 2000.

"We don't recommend people trying to adapt their computers to USB by themselves," Reynolds says. "And by the time you get the plugs and software put in professionally, you could get a newer computer."

USB was launched by Intel Corp., but now other companies like Compaq Computer Corp. have come on board. The vast majority of vendors currently offer USB-equipped computers. On deck is USB2, slated for release late next year. It will be 20 times as fast, about 240M bit/sec., and will offer greater capabilities. "Right now, you can only get a video picture in the corner of your screen," Enderle says. With USB2 ports, you'll be able to have full-screen video viewing.

Such developments are in response to Apple Computer Inc.'s FireWire, which is lightning-fast technology at almost 400M bit/sec. FireWire is a high-speed dataport offered on most Apple and Sony Corp. equipment.

With the current USB, a peripheral that requires a lot of juice should be plugged in to its own port, not crowded on a hub. "A video camera [or] anything that pushes a lot of data should be plugged [in] separately because they need a lot of throughput," Enderle says.

Management of devices is easy to control, Reynolds says. "USB allows me to stick all these things on my PC that would be a nightmare to manage, and it locks it or unlocks it for me. They can do away with silly passwords," he says.

Enderle adds: "This opens up a whole new class of components. High-speed monitors, networks, camcorders. If you had it, you'd love it." ▪

Menagh is a freelance writer in Calais, Me.

DEFINITION

Universal Serial Bus (USB) is a standard for connecting peripherals to a computer. Most PCs produced in the past year or so come equipped with USB ports. These are alternatives to serial or parallel ports. The USB connection is fast — 12M bit/sec. — and allows you to connect your peripheral.

How it works

① **USB** supports sockets in the back of the computer.

② The **USB** cable that connects into it contains four thin wires that will give up to 12M bit/sec.

③ You plug in your equipment, such as a USB-compatible printer, scanner or joystick, CD-ROM and more.

Each device has its own ID so that the network will know how much bandwidth to assign to it. This ID also contains information about the device, such as vendor and purpose.

When the device is unplugged from the socket, that's communicated to the applications, and the drivers are automatically unloaded.

Besides plugging and unplugging, the end user doesn't have to do any configuration of the devices.

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@computerworld.com

SOFTWARE IS TOO HARD TO USE! ▲

A group of users and
vendors is seeking, for the
first time, to standardize
ease-of-use ratings
By David Orenstein

R IGHT NOW, corporate information technology
managers and purchasers have no standard
way to assess the usability of the software
they buy, but within a few years it may be a
matter of simply looking at the box.

Next month, a group of corporate users, vendors
and experts will convene in Redwood Shores, Calif.,
to test what they hope will become a common
method for evaluating the usability of software. The
report, which a vendor would present to users, is
analogous to nutrition information and ingredients
on a food package. If the program is successful, it
could save corporate software buyers millions of dol-
lars by reducing the lost productivity or unnecessary
training that hit when companies are unable to judge
how easy software is to use.

State Farm Insurance Cos. in Bloomington, Ill., was
all set a few years ago to spend more than $5 million
on an intranet-based career planning software pack-
age. But when the company brought the package to
its usability lab, it made a huge savings.

Lab tests found that none of five test users was
able to effectively complete the software's 40-hour
regimen, says usability lab director Jack Means.
The results prompted State Farm, with its 75,000
desktops' worth of buying power, to walk away from
the deal.

If vendors faced that danger all the time instead of
rarely, experts say, IT would be a lot easier to use
than it is today. The common report format would
describe exactly how a vendor tested its software's
usability by fixing the demographics of the testers,
the test tasks they performed and the results of the
tests. The data will be sufficient, says Keith Butler,
advanced computing technologist at The Boeing Co.,
to let companies replicate the vendors' tests to en-
sure their accuracy. The purpose of next month's
meeting is to match users with vendors in pilot tests
of the reports.

Bottom-Line Value

The big question the pilot tests must answer is
whether companies will find the reports valuable.
"To make a convincing argument, we will need to
have some hard data," says Sharon Laskowski, man-
ager of the visualization group at the National Insti-
tute of Standards and Technology (NIST), which is
facilitating and financing the effort. "If it's not affect-
ing the bottom line, [companies] will not do it."
There are now almost no hard numbers on the sav-
ings a company can achieve when it pays stringent
attention to usability.

But heavyweight user companies such as State
Farm, Boeing, Fidelity Investments, Eastman Kodak
Co. and Northwestern Mutual Life Insurance Co.
came to NIST two years ago to launch the effort,
called the Common Industry Format for Usability
Test Reports. Top computer industry vendors such
as IBM, Compaq Computer Corp., Microsoft Corp.,
Oracle Corp., Intel Corp., Sun Microsystems Inc. and
Hewlett-Packard Co. are also at the table.

After the players have conducted two and a half
years of pilot tests, Laskowski says, the companies
will take the data to a standards organization in
hopes of changing the way IT purchases are made. It
will be the difference, she says, between a customer
vainly asking whether software is user-friendly and
that customer having enough information to re-
create the tests and validate the vendor's claims.

Milwaukee-based Northwestern Mutual has added
to its standard request for proposals a paragraph that

specifically asks vendors for usability data. "If you've got it, we want it," says Eric Strandt, the insurer's manager of software product design. But the company is constrained by the reality that many vendors don't have that kind of information — and there's no standard that encourages them to come up with it.

Northwestern does some software to the lab. "We've done quite a bit of that, with varying degrees of success," Strandt says. A few years ago, contact management packages were rejected after they all showed substantial usability concerns. Software from a small vendor, Corporate Software & Technologies in Montreal, beat out IBM to become the company's calendaring package because of its better usability. Northwestern Mutual would have saved even more considerable grief when it upgraded to Microsoft Office 97 had it done usability tests and found file format incompatibilities, Strandt says.

Other Savings

State Farm has success stories of its own, but their benefits are less tangible than in the case of the career software savings, Means says. When the company was mulling a time and attendance management product, it assumed that administrative assistants would need three days of training. Usability tests showed that a mere half-day — or, at most, one — was needed. The savings: roughly two days' pay for each of approximately 10,000 assistants.
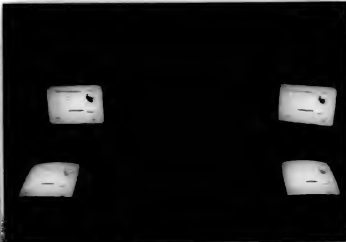
In general, usability labs, which first popped up in the early 1990s, are used to test software that's developed in-house. That's where potential savings are the greatest, because tests that reveal problems early in the development cycle can save months of development time — and, of course, prevent productivity losses when the application is deployed.

Usability experts such as Janice Rohn at Sun point to The Standish Group International Inc.'s Chaos studies, which have attributed many of IT's frequent project failures to a lack of end-user input. Usability professionals such as Means cite IBM research that the eventual return on a dollar spent on usability early in the development cycle can be up to $100.

As fidelity, usability testing is a growing practice — but not for software purchases, says Thomas Tullis, vice president of human interface design. The company is building a second lab to accommodate an increase in testing driven by the desire to make the company's Web sites more usable. The prospect of acquiring customers via a user-friendly Web site or the fear of losing them with a frustrating site has made companies much more sensitive to usability, say experts like Rohn and Harley Manning, an analyst at Forrester Research Inc. in Cambridge, Mass. "When you add the Web, everybody is a software company," Manning says.

But the benefits Tullis and others see in improving their own software is harder to find when reviewing commercial tools. Although many usability professionals say their test results have been able to effect major changes in vendors' products, that's not the norm. The feedback may not reach, Tullis says. Butler agrees: "If we were to do the testing for our suppliers, it would have to be during the development of the product."

For the common industry format effort to take off, IT must make the usability of commercial software a top priority and hold vendors' feet to the fire, say experts, including Manning. Although Rohn says she believes that a common reporting format would help vendors by clarifying what usability criteria users

most want, she acknowledges that the added burden on vendors won't be welcomed unless customers make it a competitive issue. "It's a business decision,"

STATE FARM'S DARRIN DUVALL (LEFT) AND JACK MEANS helped the company avoid installing a difficult-to-use software package. A visit to State Farm's usability lab put the last-minute kibosh on a planned $5 million purchase
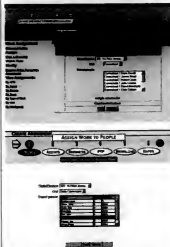
STATE FARM DEVELOPERS changed this work scheduling and assignment application's interface after usability testing showed that end users working with the old interface (top) didn't realize that they had to follow a six-step process. If users jumped to a new page out of order, they would lose their work. The new interface (at bottom) made it clearer that a process had to be followed

she says. "The more the customers are telling this to vendor companies — that this is important — the more the vendor companies will take note."

As much as they want to cheer it on, many usability experts are skeptical about the reporting format's prospects. Either they worry that user companies will show the resolve necessary to nudge vendors beyond lip service, or they're not sure the reports will specify anything useful enough. Usability's benefits, after all, have proved difficult to quantify so far.

Manning says usability testing ultimately won't gain much ground. Surprising as it may be, he says, quality hasn't ranked as the primary priority in software purchases. "Do you pick up software boxes that tell you how bug-free the software is?" he asks. "We buy buggy software all the time." Meanwhile, he adds, "the usability community constantly struggles for attention."

Moreover, usability testing can run into difficulty because it's often conducted with a small sampling of testers. Users may widely in their skills and intelligence. One particularly savvy or dim user can skew the results abnormally

Laskowski says the common reporting format would at least elicit enough detail from vendors so that customers would know how much experience a vendor's testers have. The customers would also see which features were tested, so they could determine whether the vendor tested the features they want.

Even users directly involved in the project concede that it may not achieve the ideal goal of making usability data as visible to software purchasing as nutrition data is in food purchasing. "I think the resolve varies," Strandt acknowledges.

"I certainly hope it is going to take off," Tullis says. But if the effort ultimately results only in heightened awareness about the importance of usability testing, he says. that will be a major benefit in its own right.

It's a worthy effort, Manning says. "It might help if users revolted a little." ■

SOUND
AND (SOMETIMES) FURY

ELLEN BENEDICK

Sound adds a useful dimension to
corporate intranets . . . and a few gray
hairs for IT By Cynthia Morgan

HE DAY IS fast approaching when
some executive will have a singu-
larly bright idea: Why not fill in the
blanks of his otherwise terse slide
show with the recorded speech
that went with it, and post the
whole shebang on the corporate
intranet? It would make a more informative presenta-
tion and save him from repeating the speech to every
new employee.

He's right. Audiovisual experts say sound paired
with still images or text can have nearly as much im-
pact and information as video without the high costs
of producing and transmitting video clips across the
network. It's also a good step toward preparing your
network for the inevitable onslaught of rich media.

I've been experimenting with adding useful sound
to network presentations for the past few months.
Despite vendor claims, standard desktop software
can't always cope with multimedia demands. Slide
presentation software has a difficult time synchroniz-
ing text and speech. And building sound into animat-
ed slide shows, a corporate mainstay, is difficult. Un-
less you use the right tools, your audio efforts could
wind up being a lot of effort for not much benefit.

A WAV file, the typical format for digitized sound,
tends to be very large and unsuited for transmission
across a network, in part because it contains a great
deal of information that the human ear can't perceive.
A codec/decoder (codec) application can compress
those files into smaller encoded files.

One technique, perceptual audio encoding, con-
fines its compression activities to sounds outside the
range of normal human hearing. Those codecs, in-

cluding RealNetworks Inc.'s RealAudio, Microsoft Corp.'s Windows Media and the nonproprietary MP3, leave a high percentage of the original sound data in the file after compression.

But your choice of codec depends less on the quality of its output than on its production considerations.

In my tests, G2 shared a few seconds off total encoding time and also streamlined the production process. Ixing Technology Corp.'s MP3 encoder was the hardest to use, although it was generally a fast processor once the settings were correct. Windows Media spent more time in encoding, and its setup was sometimes confusing — there are a lot of subtle steps you can take to enhance the final result, but learning where they are can be time-consuming. If you plan to compress large batches of sound files regularly, those small differences really add up.

Encoded sound files in hand, I set out to marry them to a slide presentation and publish the package on the Web. I turned a few extra hairs gray as I built a simple Microsoft PowerPoint 2000 presentation to augment a Computerworld Minute — an audio news report we publish daily on our Web site. Then I tried to synchronize it with my encoded sound files.

Right away, I discovered that, although PowerPoint can play a single sound file across multiple slides, syncing images with appropriate spoken sentences is a tedious matter of trial and error. Lotus Development Corp.'s Freelance Graphics wasn't much better, although it's clearly better suited for building online shows. Rather than spend hours trying to match up the entire presentation, I broke the sound file into components I could sync with a particular slide.

The typical corporate speech includes unwanted dialog or noise. So in addition to PowerPoint, I needed a sound editing tool. I chose Sonic Foundry's Sound Forge 4.5.

Sound Forge is almost the de facto "word processor" of sound editing; you can cut, paste, drag and drop a visual graph of the file, and you can apply effects such as fade-in or fade-out. I used it, for example, to clean up the heavy breathing of one speaker, fade music to silence and fill in dead air. You can save money by opting for the $99 "lite" version, Audio Anywhere, which includes a less extensive version of Sound Forge. That's probably all you'll need, plus Sonic Foundry's Acid Style music authoring tool and hundreds of public domain sound clips.

PowerPoint doesn't handle G2, unfortunately. To make up for it, RealNetworks offers RealSlideshow, a free download that offers more powerful rich media features but is less than stellar at anything else. It's far better at creating online presentations because it tracks overall download time and will automatically publish to a streaming G2 server on the Web. It also lets your presentation carry two separate tracks of audio, so you can have background music and a voice-over simultaneously, something PowerPoint had trouble with.

But RealSlideshow wouldn't accept my imported presentations; it works only with JPEG or bit-map images. Music and image editing tools were almost nonexistent. Although I could specify which image linked to which sound file, fine-tuning timing was impossible. The program mapped each slide's images no matter how I tinkered with compression settings, making text almost unreadable. You'll have to add legible text later using RealNetworks' RealText editor, which is a lot harder than simply typing words on the page and adds considerably to production time.

Of course, PowerPoint and RealSlideshow aren't the only programs that can place sound-and-image files on the Web. I had better luck with Kai's PowerShow, $50 from MetaCreations Corp. It handles presentations reasonably well and offers precise sequencing of sound, image and simple animation.

If you'd be augmenting a lot of existing presentations with sound, you should strongly consider switching to PowerShow or other low- to midrange multimedia authoring tools. For higher-end uses, such as building interactive tutorials, consider Digital Lava Inc.'s video publishing systems (read more about it at our Web site), which not only joins sound and images but also indexes files by keyword and provides navigation points throughout the presentation.

Computerworld covered the ins and outs of setting up streaming audio servers in a previous issue [Technology, June 28]. Until recently, the choice of a streaming server was dictated by the particular codec you were using. But that's rapidly becoming a moot point: New streaming server software products, such as Sonic Foundry's StreamAnywhere, now in beta, can stream music created by the most popular codecs.

(Note: Computerworld uses RealNetworks' G2 encoding and streaming media server to record and transmit the Computerworld Minute. It's an easy-to-use, low-maintenance system, and the player is readily available. Our sound engineer, Aaron Bishop, says there hasn't been much call for the Windows Media editions; because the players are free, most people simply download both. And either player can handle MP3.)

The final results? You can tell here I simply files on our Web site. In the end, I chose to put up with PowerPoint's limitations: I simply don't do enough to warrant the steep learning curve of a multimedia authoring tool. ◼

GLOSSARY

If your organization intends to deploy multimedia files across the network, you'll likely encounter many of the following buzzwords.

BAND: A range of frequencies that fall within two defined limits.

BIT RATE: The average number of bits that one second of multimedia data will consume. Usually measured in kilobits per second (K bit/sec.), it can be used to describe how much compression has been applied to a multimedia data file and can be a measure of sound quality as well.

CD RIPPER: A program that pulls audio tracks from a CD and converts them to digital WAV format.

CHANNEL: A stream of sound intended to be reproduced through a single output device such as a loudspeaker. Monaural sound, for example, has a single channel that can't be split into additional channels. Standard stereo sound, on the other hand, has two channels: treble and bass.

CODEC: Stands for compression/decompression, or coder/decoder. A codec manages the process of turning digital multimedia data — such as sound or video — into a form that can be sent across a network and received on the other side with as little loss in quality as possible and minimal impact on resources such as bandwidth.

DECOMING: The process of converting an encoded (compressed) bitstream back to its original format.

ENCODING: This very complex process of converting uncompressed digital data into a high ly compressed and coded form known as a bitstream. In order to be played, the bitstream must be uncompressed, or decoded, and returned to its original format.

FREQUENCY: A single repetition of the soundwave's shape is known as a waveform or cycle. The frequency of that sound is the number of cycles the wave goes through in one second, measured in hertz (Hz). The more waveforms that occur in one second, the higher the frequency. The higher the frequency, the higher the tone (pitch) of the sound.

LOSSY COMPRESSION: A technique of reducing file size by discarding data. Once discarded, data can't be retrieved. Lossy compression techniques produce small files that don't need to be decompressed in a separate step before use, but they trade off in some loss of quality.

LOSSLESS COMPRESSION: A technique of reducing file size by eliminating redundancies. Lossless compression formats, such as Zip, must be expanded before use, but they reproduce the original file exactly, without data loss.

MP3: First, it doesn't stand for MPEG-3. It's short for MPEG-Audio Layer 3 and is the third in a series of audio compression scheme standards maintained by the Moving Picture Experts Group. MP3 is generally thought to produce better final sound quality than its predecessors, at a much higher compression rate.

SAMPLING: Sound is, by definition, an analog phenomenon because it occurs in continuous waves. To be used in a computer, it must be converted to a digital format. In order to do this, instruments measure, or sample, the frequency of the sound wave at specified intervals. That's known as the sampling rate. The higher the sampling rate, the more samples per second are taken by these instruments, and the finer the digital version will be to the original analog sound wave. However, the higher the sampling rate, the larger the resulting digital sound file will be — because the number of samples being saved increases as well.

WAV: Short for "waveform audio," an abbreviated pronounced "wave." WAV is one of the most common uncompressed digital audio formats.

The Rise of Sun

Fledgling company envisions open system leading to better technology, lower prices

BY LESLIE GOFF

RIGHT FROM THE beginning, in February 1982, starting with the name and extending to the technology, there was a sort of religious ambience around Sun Microsystems Inc.

The name was a jab at competitor Apollo Computer, named after the Roman sun god. Employees saw themselves as on a mission to evangelize change in how information technology operated rather than just to sell a product. And the Unix proselytes, Sun's early customers, had a zealous devotion to the operating system. To them, Sun's message was sacrosanct: high-volume, low-priced, networked workstations with an open architecture running the first commercial-strength version of the hallowed operating system.

"There was a lot of loyalty to Unix — people felt religious about it," says Andy Bechtolsheim, who co-founded Sun along with fellow Stanford University alumns Scott McNealy and Vinod Khosla and Berkeley Unix guru Bill Joy. "The open-system philosophy Scott created so well today really existed all along," says Bechtolsheim, now vice president of engineering at Cisco Systems Inc.

"Open Systems for Open Minds" was the fledgling company's first slogan, recalls Joy Puri, the company's first marketing person and now vice president, worldwide sales of software and tech-

McNEALY: An open system philosophy

CLARK: Sun's emerging rival

nology. Sun generated $9 million in revenue the first year, based largely on the fervor for Berkeley Unix and the reputation of its founders in the Unix community.

To gain momentum, Sun targeted the academic, research and technical communities. Its first critical sale was to computer-aided design vendor Computervision Corp., which had initially tapped Apollo for a big contract. Although Apollo's product was more mature, it had a closed architecture and a proprietary Aegis operating system, Puri says.

McNealy, Puri and Khosla flew to the East Coast to make one more bid for the business. When they arrived at Computervision, the company president wouldn't see them. So they waited in the lobby all day and cornered him on his way out of the building. The three sold Sun on their vision of the future: an ultimate shift to open systems, leading to more innovation, better technology and lower prices.

"We knew that Computervision would be a company-

making deal, and we said we're going to get that business no matter what," Puri says.

And they pulled the contract right out of Apollo's hands, feeding the rivalry and giving the company a leg up on another emerging competitor founded in 1982, graphics workstation maker Silicon Graphics Inc., launched by James B. Clark and seven colleagues.

Sun's deal with Computervision "sealed our reputation in the marketplace and led to a lot of follow-on business," Puri says. It also was a defining moment in the company's corporate culture, he adds: "Never take no for an answer." ◗

Arpanet Adopts TCP/IP

Allows for easier access to Internet

BY LESLIE GOFF

While Sun Microsystems Inc. was promoting networking by being the first computer maker to include an Ethernet port as a standard feature on its workstations, a key decision by the standards committees governing Arpanet was about to blow networking wide open in 1982.

After eight years of working toward a standard protocol for connecting to Arpanet, the committees formally adopted Transmission Control Protocol (TCP) and the Internet Protocol (IP).

"That put the protocol in the users' hands ... and made it easier to build an interface to the network," says Larry Roberts, known as the father of the Internet and a participant in the standard's adoption. "There was a standard interface before, but it had to be hard-wired. TCP/IP changed

the growth rate [of the Internet] because it made it easier for people to get access."

Before the formal transition to TCP/IP began the following year, only 562 host computers were tied into the network and average peak traffic was around 5K bit/sec, Roberts says. The new protocol suite doubled both hosts and traffic within the first year, and they continued to double each year after that until 1997, when traffic started to outpace host growth. ◗

Goff is a frequent contributor to Computerworld. *Contact her at lgoff@ix.netcom.com.*

1982

The U.S. Department of Justice dismisses the 13-year-old antitrust lawsuit against IBM.

Time magazine replaces its traditional Man of the Year — the "Man of the Year" — the computer. Publisher John A. Meyers writes that no human "symbolized the past year more richly or will be viewed by history as more significant, than ... the computer." ◗ The main writer for the issue completes his assignment on a typewriter.

Mitch Kapor starts up **Lotus Development Corp.** in Cambridge, Mass., with eight employees. At Comdex/Fall '82 in November, the fledgling company introduces a **1-2-3 spreadsheet**,

promising that it will "have your IBM PC jumping through hoops." Kapor developed the spreadsheet for writing the software directly into the video system of the IBM PC, bypassing DOS. It gains a competitive edge by running faster than its competition and combining its spreadsheet capabilities with graphics and data retrieval.

Autodesk Inc. is founded and ships the first version of AutoCAD.

Red Canion (left), John **Harris** and **Bill Murto**, former senior managers at Texas Instruments Inc., found IBM PC clone maker Compaq Computer Corp. in Houston. The start-up introduces the **Compaq Portable PC**, featuring an IBM-compatible ROM BIOS.

Apple Computer Inc. reaches $1 billion in revenue. Amid its financial success, several events take place that will ultimately alter the company's future. The company announces its doomed Lisa microcomputer, it ships Microsoft's

Corp., a prototype Macintosh too the software company can begin developing applications; and John Sculley, president of PepsiCo Inc., visits Cupertino after a headhunting firm asks him to consider becoming Apple's CEO.

Epson America Inc. introduces the HX-20, a notebook computer.

By April, only eight months after the introduction of the **IBM PC**, Big Blue has sold 50,000 units, and by July, it ships 200,000 PCs. Still basking in the success, IBM decides to conquer, separating its PC development team into three distinct groups: one to work on the PCjr, one to develop the PQ and one to start work on the **PQAT**, Intel Corp. rolls out the 6-MHz 80286 microprocessor — the first Intel processor that could run all the software written for its predecessor, the 8086.

The **Disney movie** **Tron**, one of the first movies to use computer-generated graphics, is released. Computer animation accounts for about 30 minutes of the film. Tron follows the adventures of a hacker split into molecules and transported inside a computer.

Storage-device maker Iomega Corp. begins production of the Alpha 10, a 10M-byte, 8-in. floppy disk drive

catalog company **PC Connection** to sell computers and peripherals direct.

Columbia Data Products Inc. introduces the MPC, one of the first IBM PC clones.

using Bernoulli technology.

DOS and **CP/M**, the little microcomputer operating system that could, battle it out for the hearts of users. While Microsoft ships two new versions of MS-DOS — Version 1.1 for the IBM PC and Version 1.25 for IBM compatibles — Digital Research Inc. releases CP/M+, and IBM begins offering CP/M-86 for its PC. Meanwhile, several devices running under CP/M appear on the market.

Mouse Systems Corp. releases the first commercial mouse for the IBM PC.

PC-Talk, a communications application developed by Andrew Fluegelman, becomes the first copyrighted program distributed as **shareware**.

Hewlett-Packard Co. introduces the HP 9000 technical computer with 32-bit "superchip" technology.

John Warnock (left) and **Charles Geschke** leave Xerox Palo Alto Research Center and found Adobe Systems Inc., with Charles Geschke.

Hub of High-Tech Opportunity

Boston lays claim to some of the best colleges, hospitals and sports legacies in the country — not to mention one of the top IT job markets

By Steve Alexander

Renowned for its history and as an academic center, Boston has also gained notoriety as one of the top high-tech regions of the country. IT pros seeking openings there will find myriad opportunities in financial services, health care, high-technology and education, but they should be prepared to deal with a high cost of living.

The city's top information technology employers are in the field of finance, says Daniel J. Walsh, president and chief operating officer at Darwin Partners Inc., a Wakefield, Mass. recruiting firm. High-tech companies rank second, while health care is third, he says.

But tight federal cost controls on health care providers have somewhat diminished the money available for hiring IT professionals, says Juli Ann Reynolds, managing director at the Boston office of New York recruiting firm Russell Reynolds Associates Inc.

Education is a bit less attractive,

Walsh says. Despite the large number of colleges and universities in the Boston area, he ranks it fifth or sixth in terms of IT job opportunities.

Boston's cost of living is high, Walsh says. And residents have been known to refer to the state as "Taxachusetts." "If you're going to live downtown, you need to make $40,000," he notes, but the cost of living is $5,000 to $40,000 less in suburbia.

IT professionals in Boston offered a sense of the opportunities in their fields, as well as what it's like to live and work in the metropolitan area.

Financial Services

The traditionally financial services market is loosening up and offers rising IT salaries.

Hot skills in the financial sector include more than two years of experience in WAN networking, C++, programming or PowerBuilder, says Donald MacKinnon, senior vice president for information services at Liberty Funds Group, a Boston money management firm. "Salary ranges for some of those skills have gone up 15% to 20% in the last year," MacKinnon says.

Boston firms are relaxing their work rules, MacKinnon says. "More and more companies are adopting casual wear during the summer or at least one day a week. They're switching from the stodgy, button-down approach because employees like it."

As a place to live, Boston offers IT pros an unequaled mixture of history, culture, colleges, large hospitals, major sports franchises and proximity to the mountains and ocean, MacKinnon says. But Boston also "is a city where you get to live in four seasons," which makes it attractive to some people and not others, he says.

Health Care

Health care is one of the giants of the Boston IT market, but it sometimes has difficulty competing for staff with financial services and technology firms.

Health care is appealing to IT professionals interested in cross-training or learning skills outside their existing areas of expertise, as well as to those who want flexible hours, says Meg Aranow, the CIO at Boston Medical Center. In addition, she finds that "the mission of a hospital appeals to some people."

But health care has some disadvantages when it comes to hiring. One is that health care hasn't moved into Web and Windows NT development as quickly as other industries have, partly because hospital computer system vendors were slow to come out with NT applications, Aranow says. In addition, health care can't always afford to match the salaries IT pros can get in the financial services and technology industries, she says.

But salaries in Boston health care companies are 5% to 7% higher than a year ago. An NT or Unix programmer with three to five years of experience can earn $75,000 to $85,000, Aranow says. The IT professionals most in demand include Unix and Web programmers and people who can work with

"interface engines" that help hospitals exchange clinical and billing data with other firms. "The supply of experienced Unix and Web programmers is very tight, while the supply of NT programmers is tight but not as bad," she says.

Aranow considers one of the benefits of living in Boston to be "universities, which provide a constant influx of new smart people into the marketplace." The biggest challenges for newcomers are the high cost of housing and shortage of rental property, she adds.

Colleges and Universities

With its preponderance of colleges and universities, Boston has long been viewed as a center of higher learning. These institutions provide a variety of opportunities in Boston that offer flexibility, but often pay less than jobs at corporations.

"There are probably 30 educational institutions, so you can move back and forth among them," says Micheline Jedrey, vice president for information services and college librarian at Wellesley College in Wellesley, Mass. "Like most educational institutions, we have proportionately more women than most IT shops. I think it's because we have more flexibility and less emphasis on profit and the bottom line," Jedrey says. "We're successful at hiring escapees from the corporate environment."

Jedrey, who has 45 IT employees, is seeking skills that include Oracle database, C++, instructional and understanding instructional design over a LAN. "We purchase a lot of off-the-shelf products, so we don't have a lot of programmers. Our most successful strategy has been to grow our own through internship programs." She says Boston is "a place where there is history, a symphony, a museum of fine arts and lots of places to eat and drink and have fun."

Alexander is freelance writer in Edina, Minn.

MEG ARANOW of Boston Medical Center says health care has difficulty luring IT pros

WELLESLEY COLLEGE'S Micheline Jedrey: IT jobs are flexible

LIBERTY FUNDS' Donald MacKinnon has seen Boston's IT salaries rise

	0-2 YRS.	3-4 YRS.	5+ YRS.
Network administrator/analyst	$43K	$51K	$58K
LAN manager	$45K	$52K	$61K
Project manager, systems and programming	$49K	$58K	$69K
Senior systems analyst	$55K	$57K	$61K
Senior systems programmer	$50K	$54K	$62K
Senior programmer analyst	$45K	$50K	$56K
Programmer analyst	$38K	$44K	$47K

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IT CAREERS

WEEK IN STOCKS

PERCENT

Mastor Corp. (H)	23.8	Sprint Corp.	-16.6
Infomatica Corp. (H)	20.9	Red Hat Inc. (H)	-16.0
Cadence Design Systems	19.8	Ariba Inc. (H)	-12.6
eBay Inc. (H)	20.7	Applied Materials	-12.0
Edify Corp.	16.3	Rational Software Corp.	-11.5
Prodigy Communications (H)	15.2	Applied Materials	-9.8
eToys Inc. (H)	15.4	Tibco Software Inc. (H)	-6.1
Compuware Corp.	15.4	CBT Group Plc	-6.7

DOLLAR

eBay Inc. (H)	30.38	Red Hat Inc. (H)	-21.44
Amazon.com Inc.	14.06	Ariba Inc. (H)	-10.19
Qualcomm Corp. (H)	10.06	Sprint Corp.	-10.50
Yahoo Inc.	10.00	Juniper Networks Inc. (H)	-6.50
Infomatica Corp. (H)	10.00	Applied Materials	-6.06
Sony Corp. (H)	7.56	Teradyne	-5.88
Gateway (H)	7.44	Ameritech Corp.	-5.08
Adobe Systems Inc. (H)	7.25	MCI Worldcom Inc.	-4.69

Technology IPOs on Record-Setting Track

Majority of the offerings are Internet-related

BY STEWART DECK

1996 MAY HAVE been a record-setting year for technology start-ups going public. But then came 1999.

Through the end of last month, 199 initial public offerings (IPO) of technology companies have hit the market. That's more than halfway to the 371 that did so in 1996, when the first early wave of now well-known Internet companies — including Yahoo Inc. in Santa Clara, Calif. and Netscape Communications Corp. — popped onto the market.

Of course, not every IPO takes off. Both Quotesmith.com Inc., an online insurance quote service in Darien, Ill., and online florist 1-800-Flowers.com Inc. in Westbury, N.Y, fell in their first day of trading this month and are still below their opening offering prices of $21 and $11 per share, respectively.

"The dominant issue this year has been Internet IPOs flooding the marketplace with offerings over the first half [of 1999], probably four times more than in previous years," said Ken Andersen, an analyst at Technologic Partners, a New York-based publishing and services tracking firm.

Andersen said this flood has been driven by a renewed thirst for Internet stocks. "There's so much money going into the public market for [already established] Internet stocks that it drives others" to join the fun, he said. The market has also been driven by investors who have pumped money into many of the companies with an e-commerce component, he added.

A scan down the list of this year's technology IPOs shows that the overwhelming majority have been Internet-related, with close to 10% of the total sporting a dot.com company name. Some of the more familiar names include online spreader eToys Inc. in Santa Monica, Calif., online ticketing and car seller Priceline.com Inc. in Stamford, Conn., Internet map provider MapQuest.com Inc. in New York and Value America Inc., the giant online high-tech store in Charlottesville, Va. (see chart).

But it hasn't been exclusively an Internet year. Informatica Corp., a Palo Alto, Calif.-based provider of data warehousing technology, went public in late April, as did Marimba Inc., the Mountain View, Calif., developer of push technologies. And Be Inc. in Menlo Park, Calif., the developer of a nascent operating system that Apple Computer Inc. once courted for its own machines, just went public late last month.

COMPANY	OPENING PRICE	AUG 18 PRICE
Value America	23	13 1/2
Informatica	16	55
Media Metrix	17	47 7/16
eToys	20	45 5/16
Ariba Inc.	23	110 7/16

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NEWS

Internet Patents

online buyers set the price they're willing to pay and sellers bid for their business. What differentiates the process from a traditional request for proposal is that it occurs online.

Another is Home Account, which provides outsourced Internet banking services to Bank America, Ameritrade and other corporate customers. It has patents for software technology central to those services.

"Our patents are around the delivery of services," said Home Account CEO Chuck White. They're also a key source of increased revenue for the Emeryville, Calif., firm because banks that want to offer the same online services would need to go through Home Account to do so.

But that's assuming the company's patents are enforceable, which is a big if, according to several experts.

"In my opinion, the patents are worthless," said Vernon Keenan, an Internet analyst at Keenan & Associates Inc. in San Francisco. He also noted that because patent holders such as Open Market Inc. (see chart) have so far done little, if anything, to enforce their monopolies, "IT managers and entrepreneurs shouldn't be afraid of patents. They can safely ignore them."

Patent attorneys also have their doubts about the flurry of new Web patents. "People have to be aware that a lot of the patents at issue are probably not going to stand up in court," said Bart Rein, a patent attorney and partner at New York law firm Pennie & Edmonds. One of the primary reasons, he said, is that the standard the patent office uses for Web-related patents is "pretty low."

Still, other analysts said they believe that many of the Internet patents should never have been issued because they grant very broad protections for business processes, such as on-

line ordering with a credit card, that can be executed in only a limited number of ways.

"Instead of patenting, what they should be doing is trademarking brands," said Steve Telleen, an e-commerce analyst at Cambridge, Mass.-based Giga Information Group Inc.

Antoine Toffa, CEO at Denver-based Trip.com Inc., which holds a provisional patent for software technology and processes related to online comparative shopping, said he agrees — up to a point.

Companies like Priceline.com shouldn't be granted patents for moving traditional business methods to the Internet, Toffa said.

"We feel, like many other companies, that the patent isn't enforceable because it doesn't include technology. It's for a business process that existed all along," Toffa said.

By contrast, Trip.com's patent covers an online shopping process plus all of the software code that went into its Intellitrip technology, which sifts through huge volumes of airfare data to prevent users with the lowest fares.

As for enforcing its patent, Toffa said the onus lies with Trip.com and would be fairly straightforward. "First, we'd look at the online travel industry to see if anyone is doing the same thing. We already have a

unit that scans for what competitors are doing," he said.

Another somewhat ironic option, he said, would be to hire one of an emerging breed of investigative services that conduct searches of sites for possible patent infringements.

Some firms will do that for a fee, he said, proving that "there's always an opportunity somewhere for someone to make money on the Internet." ◼

Home Depot

The new applications expand on Home Depot's heavy investment in the Java programming language, which it has used to develop systems for things such as renting tools and preparing retail sales reports for district managers.

And the development comes at a time when Home Depot is finally ready to start rolling out Expo Design Centers on a wider scale after testing and refining the showroom concept for the past eight years. The company has opened four Expo stores since April, and

last week it announced plans to increase the number of design centers from 12 now to 26 next year and 200 by 2005.

Until now, most of the front-line work in the Expo centers was done manually — a situation that was "a real nightmare," said Curtis Chambers, a manager in Home Depot's infrastructure technology group.

Paper Catalogs Out

To order flooring, bath fixtures, appliances and other items for customers, workers had to flip through paper catalogs and then enter special purchase orders into Home Depot's retail ordering system, Chambers said.

That worked, "but it was

kind of like taking a square peg and filing it down to fit into a round hole," he said. "The retail system wasn't built to handle the number of [nonstock] orders that Expo creates."

Meanwhile, interior designers and project coordinators who supervise installations had to use file folders and pieces of paper to keep track of things, said Michelle Valvo, development team leader for the project-tracking application.

And as the design centers, she said, "the whole key is the follow-up with customers." Now, room measurements and installation schedules get entered into the tracking system. Products can be viewed and ordered directly from the new order-entry application.

The Java-based programs run on PCs or thin clients and connect to Home Depot's in-store Unix systems and corporate mainframes via application server software from Novera Software Inc. in Burlington, Mass. The application server software conforms to the Common Object Request Broker Architecture for distributed computing.

Plans call for the applications to be installed at all the existing design centers by year's end. Chambers wouldn't disclose how much it cost to develop the software, but he said each application took about 30 man-months to finish.

Home Depot was one of the first companies to make a big

commitment to working with Java. Chambers said the company looked at packaged software for the new applications, such as calendaring systems that could track projects. "But most of the stuff we're doing is unique," he said.

The design center format puts Home Depot "into a whole different area that its existing infrastructure wasn't designed to meet," said Donald Bellomy, a retail industry analyst at Aberdeen Group Inc. in Boston. "They're telling what is essentially a service, not high-volume products."

The first Expo center opened in 1991, but Chambers said Home Depot didn't begin planning the new applications until last summer while the showroom concept was refined at a handful of stores. "None of the [original] stores look anything alike," he said. ◼

THE BACK PAGE

FRANK HAYES/FRANKLY SPEAKING

The 411 on Y2K

D R. EDWARD YARDENI is my favorite year 2000 doomsayer. I like Dr. Ed because he collects truckloads of Y2K information (you can peruse it yourself at *www.yardeni.com*) and analyzes it with the rigor and vigor you'd expect from the chief economist for Deutsche Bank Securities. Yardeni thinks Y2K problems will cause a global recession. Specifically, he figures a 25% chance of a six-month recession, a 40% chance of a yearlong recession, a 5% chance of a Y2K depression and a 30% chance nothing much will happen. (Those really aren't bad odds, though — only 2-to-1 in favor of any downturn at all and better than even odds of nothing worse than a modest slump.)

But Dr. Ed gets the doomsayer label because most other economists pooh-pooh the idea of any Y2K recession at all. Just last week, the National Association for Business Economics (NABE) reported a survey of 481 members, and only one named Y2K as the most serious economic problem facing the U.S. today. (The big threats, say NABE economists, are an overheated stock market and a poorly prepared labor force.)

Gartner Group issued its own year 2000 forecast last week, pronouncing things in pretty good shape. "As the United States, we don't expect any real significant problems to the public at all" on Jan. 1, said Lou Marcoccio, Gartner's top Y2K analyst. "The day probably will go by somewhat unnoticed, except for the panic issues." Gartner also believes there won't be a recession.

The Gartner report came out three days after a General Accounting Office official told a congressional hearing that federal, state and local governments all still have lots of Y2K work to do. But as it happens, 79% of those business economists from NABE said the federal government was in fine Y2K shape, and 67% said state and local governments were Y2K OK.

Do any of these people know what they're talking about? Well, yes — some of them, some of the time. And if you can slice through the contradictory predictions for your top management, you can provide a real service — and maybe prove that your IT shop deserves some respect in understanding both technology and business issues.

After all, IT should own Y2K. We know the technical issues better than anyone. But we should also be our organizations' best source for Y2K business information — threshing out the useful facts from the chaff. If we can't do that, how do we get away with claiming a clue about any other business issue?

Some of that threshing is easy. For example, it's not tough to see that the GAO official is in a position to know government agencies still have lots of Y2K work to do; the economists are just guessing, based on what they've heard or read.

What about Gartner's claim that Jan. 1 will pass "somewhat unnoticed"? It's unsupported — another guess. The electricity will still be on for most Americans, but whether retailers, fast-food joints and emergency services will be doing business as usual is simply unknown.

A Y2K recession? Better to pass all the predictions — Yardeni, NABE, Gartner — along to your top management. They'll draw their own conclusions.

But whatever you do, make sure they know. Gather and winnow all the Y2K information you can get — on the economy, your supply chain, your industry, your customers. Shoot down myths. Point out which claims are supported. Give your executives the best, most conclusive evidence you can.

If IT doesn't explain Y2K to them, who will? ⬛

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> You need to be your organization's best source for Y2K business information.

SHARK TANK

GERMAN HOSPITALITY So you decide to spend a couple of days at Sapphire 9, the big SAP roadshows being held next month in Philadelphia. You register online. Here's what comes back: Textmce e-mail informing you that SAP has a "special registration approval option" this year. Your registration will be "reviewed by a designated SAP representative" and you can just twiddle your thumbs until you're told whether you made the cut. Sheesh, all this for a trip to Philly?

GREAT TITLES DEPARTMENT The CIA has a new CIO. Really. Central Intelligence Agency Chief Information Officer John Young gets to put that on his business card, Miko Nugent, CIO at Shurline International in Northlake, Ill., passed that one along and said, "I think I would take a cut in pay to have a title like that."

GOT IT ON ALPHA? Then get set for hard times. Sharky hears rumors that Compaq is about to slice the Belavus. Wash.-based Alpha-Windows NT development staff it inherited when it swallowed Digital. Compaq returns to confirm or deny, but the newsletter "Sharmon Knows Compaq" speculates NT could soon be replaced by Linux as the Alpha operating system of third choice.

HART SCIENTIFIC INSTRU-MENTS, out of American Fork, Utah, makes thermometers and

other measurement gear. The Shark had to chuckle at Hart's "absolutely uncritical" Web page, passed along by a couple of pilot fish, including John. Nice send-up of the usual Y2K paturism. Sample: "Even if our accounting software stops working on Jan. 3, 2000, you can count on us finding a way to bill you for whatever you bought from us prior to Armageddon." Go to www.hartscientific.com.

TAMKSTER NICK worked years ago for a "slimy operator." As D-Day approached for a doomed project, Nick wisely wrote a CYA memo. So when "the train wreck occurred" and the clients burned, he thought he was clear. But the boss denied knowledge of the memo – which had flat vanished. "Gone from my files, from the secretary's chronological files, from my system and from the server," our man reports. Guess what? Nick recently bumped into the company's (former) security manager, who, red-faced, admitted that late one night, the boss fast-talked his way into a private peek at Nick's files.

Bonus punch line: Nick long ago dubbed this boss "the twolegged shark." Hey, I reasonable that remark! Want to fire off your own slimy-boss story? Let the world know about an empty null masquerading as a top exec? Hit me sharky@computerworld.com.

The 5th Wave

"Oddly enough, it came with a PCI 'bus slot.'"